

January 29, 2019

Georgia Department of Natural Resources  
Environmental Protection Division  
Stationary Source Compliance Program  
Air Protection Branch  
Atlanta Tradeport, Suite 120  
4244 International Parkway  
Atlanta, Georgia 30354-3908

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Air Protection  
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1/31/19

Attention: Ms. Karen Hays, Unit Manager

Subject: Semiannual Synthetic Minor Deviation Report for Sterigenics, U.S., LLC, Atlanta, Georgia Facility Operating Permit No. 7389-0670093-S-05-0 for the period of July 01, 2018 to December 31, 2018

This letter provides information for the semi-annual Synthetic Minor Permit Deviation Report for Sterigenics, US LLC Atlanta, Georgia facility covering the period from July 1, 2018 through December 31, 2018. This report is intended to satisfy the monitoring and reporting requirements of Condition 5.4, 7.4 and 7.7 in operating permit number 7389-067-0093-S-05-0. For ease of reference, this report is organized by permit condition.

### Semiannual Deviation Reporting Requirements

Condition 5.4 requires:

The Permittee shall maintain and operate the AAT Scrubber System (EC2) to ensure a maximum emission level of 1 ppmv or a reduction of 99% for aeration room vents (AR-1) and a reduction efficiency of 99% for sterilization chamber vents (SEV-1, SEV-2, SEV-3, SEV-4, SEV-5, SEV-6, SEV-7 SEV-8, SEV-10, SEV-11):

a. Aeration room vents: AR-1 – Once per month the Permittee shall simultaneously collect and record the concentration of a 15-minute ethylene oxide bag sample from both the inlet and outlet of the dry bed absorbers:	
i. If the facility is complying with the 1ppmvd standard, as specified in condition No. 2.4, and the concentration of ethylene oxide in the outlet sample of the dry bed absorbers increases to 0.9 ppmv or greater, the Permittee shall replace the dry bed material within 30 days, prior to the next scheduled aeration room exhaust sampling event.	Dry Bed outlet concentration did not exceed 0.9 ppm during this reporting period.
ii. If the facility is complying with the 99% reduction efficiency standard, as specified in Condition No. 2.4, and the AAT Scrubber System reduction efficiency decreases to 99.1% or less, the Permittee shall replace the dry bed material within 30 days prior to the next scheduled aeration exhaust sampling event. The AAT Scrubber System reduction efficiency shall be calculated by comparing the ethylene oxide loading into the AAT Scrubber System to the ethylene oxide mass exiting the dry bed absorbers.	N/A
b. Aeration room vents (AR-1) and sterilization chamber vents (SEV-1	N/A

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through SEV-9, and SEV-10 through SEV-11) – any instance when sterilization chamber exhausts and aeration room exhausts are simultaneously vented through the AAT Scrubber System, the Permittee shall comply with the 99% reduction efficiency standard. During any such event, the Permittee shall collect and record the concentration of a 15-minute ethylene oxide bag sample from the outlet of the dry bed adsorbers within 96 hours of changeover. The AAT Scrubber System reduction efficiency shall be calculated by comparing the ethylene oxide loading into the AAT Scrubber System to the ethylene oxide mass exiting the dry bed adsorbers. If the reduction efficiency of the AAT Scrubber System is less than 99.1%, the Permittee shall not route any sterilization replaced. Bag testing shall continue at a sampling frequency of once per week during the changeover of the sterilization chamber vents from the Ceilcote Scrubber (EC3) to the AAT Scrubber System.	
c. When the Permittee is sampling in accordance with Condition Number 5.3a or 5.3b, the ethylene oxide loading to the AAT Scrubber System, the ethylene oxide mass out of the AAT dry adsorbers and the AAT Scrubber System reduction efficiency shall be recorded for each sampling event. These records shall be kept in a form suitable for inspection or submission to the Division. Methods of calculation for these measurements shall be submitted in the site-specific monitoring plan.	N/A
d. The dates of dry bed material placement shall be recorded and kept in a form suitable for inspection or submission to the Division.	Records are maintained. Dry bed material replaced on Dec 3, 2018

### Reporting Requirements

Condition 7.4 For each monthly sampling event conducted in accordance with conditions 5.4.a.i and 5.4.b, the Permittee shall include the following information in the semi-annual report required by Condition 7.8.

a. For AAT Scrubber (EC2), any occurrence when analysis of the dry bed adsorber outlet sample concentration exceeded 1 ppmv.	None
b. For the AAT Scrubber System (EC2), any occurrence when the AAT Scrubber reduction efficiency indicates that the efficiency is less than 99%.	N/A
c. For the acid-water scrubbers (AAT Scrubber System EC2 and Ceilcote Scrubber EC3), any occurrence when the ethylene glycol concentration in the acid-water scrubber liquor is in excess of the maximum ethylene glycol concentration established during initial performance testing.	N/A
d. For the acid-water scrubbers (AAT Scrubber System EC2 and Ceilcote Scrubber EC3), any occurrence when the liquor recirculation tank level of the acid-water scrubber is in excess of the maximum liquor tank level established during initial performance testing.	None
e. For the acid-water scrubbers (AAT Scrubber System EC2 and Ceilcote Scrubber EC3), any occurrence when the scrubbing liquor pH rises above	None

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the manufacturers recommended level of 2.	
f. For the AAT Scrubber System (EC2) list any occurrence when analysis of the dry bed adsorber outlet sample indicates the concentration exceeds 0.9 ppmv, but is less than or equal to 1 ppmv.	None
g. For the AAT Scrubber System (EC2), list any occurrence when AAT Scrubber System reduction efficiency indicates the efficiency is less than 99.1%, but is greater than or equal to 99%.	N/A
h. For the AAT Scrubber System, (EC2), list any instance when the AAT Scrubber System breaches a dry bed adsorber material replacement threshold, but the dry bed material is not replace within 30 days.	N/A

**Condition 7.7 requires:**

The Permittee shall submit a written report containing any excess emissions, exceedances, and/or excursions as described in this permit and any monitor malfunctions for each semiannual period ending January 1 and June 30 of each year. All reports shall be postmarked by the 30<sup>th</sup> day following the end of each reporting period, July 30 and January 30, respectively. In the event that there have not been any excess emissions, exceedances, excursions or malfunctions during a reporting period, the report should so state. Otherwise, the contents of each report shall be as specified by the Division's Procedures for Testing and Monitoring sources of Air Pollutants and shall contain the following: [391-3-1-.02(6)(b) 1 and 40 CFR 63.10 (e)]

- a. A Summary report of excess emissions, exceedances and excursions, and monitor downtime, deviations and monitor downtime in accordance with Section 1.5 (c) and (d) of the above referenced document, including any failure to follow required work practice procedures.

**There were no recordkeeping/ procedural deviations or excess emissions or excursions associated with section 7.7.**

- b. Total process operating time during each reporting period. Total processing time was:

**4,408 hours**

- c. The magnitude of all excess emissions, exceedances and excursions computed in accordance with the applicable definitions as determined by the Director, and any conversion factors used, and the date and time of the commencement and completion of each time period of such occurrence.

**There were no deviations during the period.**

- d. Specific identification of each period of such excess emissions, exceedances, and excursions that occur during startups, shutdowns, or malfunctions of the affected facility. Include the nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

**There were no deviations during the period.**

- e. The date and time identifying each period during which any required monitoring system or device was inoperative (including periods of malfunction) except for zero and span checks, and

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the nature of the repairs, adjustments, or replacement. When the monitoring system or device has not been inoperative, repaired, or adjusted, such information shall be stated in the report.

**There were no breakdowns of the monitoring system or devices during the reporting period.**

- f. Certification by a Responsible Official, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.

***Required Statement***

Sterigenics U.S. LLC has reviewed all applicable provisions of the Atlanta Synthetic Minor operating permit. There have not been deviations from applicable limitations or standards or monitor malfunctions during the reporting period from July 01, 2018 through December 31, 2018.

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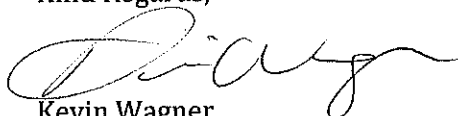
Kathleen Hoffman  
Senior VP, EH&S and Tech Services

29-Jan-2019

Date

If you have any questions regarding this submittal, please call Laura Hartman at (630) 928-1724.

Kind Regards,



Kevin Wagner  
Director  
Environment, Health and Safety

cc: Air and EPCRA Enforcement Branch, U.S. EPA Region 4  
61 Forsyth Street  
Atlanta, Georgia 30303

Daryl Mosby – Atlanta General Manager  
Juan Segovia – VP of Operations

**Waldron, Sherry**

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**From:** Waldron, Sherry  
**Sent:** Tuesday, March 5, 2019 2:30 PM  
**To:** 'lhartman@sterigenics.com'  
**Subject:** Semiannual Subpart O and deviation report, Sterigenics, Atlanta, Georgia

The Division has reviewed the above referenced reports, received on February 5, 2019. The report met the reporting requirements of Georgia Air Permit No. 7389-067-0093-S-05-0, as amended, and 40 CFR 63 Subpart O. No deviations were reported.

Thank you for your timely and complete submittal.

Sherry Waldron  
Environmental Engineer  
Georgia Environmental Protection Division  
Air Protection Branch  
4244 International Pkwy.  
Ste. 120  
Atlanta, Georgia 30354  
(404)362-4569



## ENVIRONMENTAL PROTECTION DIVISION

**Richard E. Dunn, Director**

**Air Protection Branch**

4244 International Parkway  
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Atlanta, Georgia 30354  
404-363-7000

### MEMORANDUM

June 7, 2019

**To:** James Boylan  
**Thru:** Byeong-Uk Kim  
**From:** Henian Zhang  
**Subject:** Modeling Analysis for Ethylene Oxide  
Sterigenics, Smyrna, Cobb County, GA

### GENERAL INFORMATION

As part of a review on the EPA's 2014 National Air Toxics Assessment (NATA), air dispersion modeling of ethylene oxide was conducted by the Georgia Environmental Protection Division (GA EPD) to assess the impacts of ethylene oxide emissions from sources at Sterigenics on ambient air surrounding the facility. Although this modeling is not for issuance of a permit, GA EPD adopted procedures described in GA EPD's *Guideline for Ambient Impact Assessment of Toxic Air Pollutant Emissions*<sup>1</sup>.

This memo discusses modeling results including the procedures used to develop the dispersion modeling. Two emission scenarios were modeled. The facility's current emission release configuration sends fugitive emissions to wall fans. The facility's proposed emission release configuration collects the fugitive emissions and sends them to two stacks on the roof top. For both scenarios, the air toxic impacts from ethylene oxide was below its Acceptable Ambient Concentration (AAC) at the 15-min averaging period, but exceeded its annual AAC. Site-specific risk assessments were performed at the closest four residential areas and the modeled ground-level concentrations exceeded the annual AAC at all four residential areas. The results are summarized in the following sections of this memorandum.

### INPUT DATA

1. **Meteorological Data** – Hourly meteorological data (2014 to 2018) used in this review were generated by GA EPD (<http://epd.georgia.gov/air/georgia-aermet-meteorological-data>). Surface measurements were obtained from the Cartersville Airport, Cartersville, GA. Upper air observations were obtained from the Atlanta Regional Airport – Falcon Field, Peachtree City, GA. These measurements were processed using the AERSURFACE (v13016), AERMINUTE (v15272), and AERMET (v18081) with the adjusted surface friction velocity option (ADJ\_U\*).
2. **Source Data** – Emission release parameters and emission rates were provided by the company and reviewed by the GA EPD Stationary Source Permitting Program. Two emission scenarios were modeled. The current scenario refers to the facility's current emission release configuration that sends fugitive emissions to wall fans (see Appendix A for details). In the proposed scenario, two stacks on the roof top will release the fugitive emissions after collecting them (see Appendix B for details).

<sup>1</sup> <https://epd.georgia.gov/air/documents/toxics-impact-assessment-guideline>

3. **Receptor Locations** – Discrete receptors with 25-meter intervals were placed along the property boundary. Receptors extend outwards from the fence line at 100-meter intervals on a Cartesian grid to approximately 2 km and at 250-meter intervals from approximately 2 km to approximately 5 km. Additional receptors were placed at the four closest residential areas. This domain (10 km by 10 km) is sufficient to capture the maximum impact. All receptor locations are represented in the Universal Transverse Mercator (UTM) projections, Zone 16, North American Datum 1983.
4. **Terrain Elevation** – Topography was found to be generally flat in the site vicinity. Terrain data from the USGS 1-sec National Elevation Dataset (NED) were extracted to obtain the elevations of all sources and receptors by the AERMAP terrain processor (v18081).
5. **Building Downwash** – The potential effect for building downwash was evaluated via the “Good Engineering Practice (GEP)” stack height analysis and was based on the scaled site plan submitted by Sterigenics using the BPIPPRM program (v04274). The BPIPPRM model was used to derive building dimensions for downwash assessment and the assessment of cavity-region concentrations appropriate for the AERMOD model.

## **AIR TOXICS ASSESSMENT**

The impacts of facility-wide ethylene oxide emissions were evaluated according to the Georgia Air Toxics Guideline available at <https://epd.georgia.gov/air/documents/toxics-impact-assessment-guideline>. The annual and 15-minute AACs were reviewed based on U.S. EPA Integrated Risk Information System (IRIS) Risk Based Air Concentration (RBAC) and OSHA Permissible Exposure Limit (PEL) according to the Georgia Air Toxics Guideline (see Appendix C for details). The EPA NATA used a different annual AAC value (see Appendix D for details). For this assessment, GA EPD used the annual AAC derived according to the Georgia Air Toxics Guideline and took two approaches to evaluate the impacts. The first approach (described in the Georgia Air Toxics Guideline) selects the year with the highest annual modeled maximum ground-level concentrations (MGLC) from the 5-year period and uses this year in the assessment. The second approach uses the annual modeled concentrations averaged across the 5-year period. The modeled 1-hour and annual ground-level concentrations were calculated using the AERMOD dispersion model (v18081).

### **Analysis with the Highest 5-Year MGLCs**

Table 1 summarizes the AAC levels and the MGLCs from the two modeling scenarios with the highest 5-year MGLCs. The 15-min MGLC is based on the 1-hour MGLC multiplied by a factor of 1.32. The 15-min MGLC was below its corresponding 15-min AAC. However, the annual MGLC exceeded the annual AAC. Figure 1 show the spatial distributions of ground level concentrations estimated with the current scenario and 2016 meteorological data (the year with the highest modeled MGLC). Figure 2 show the spatial distributions of MGLCs estimated with the proposed scenario and 2017 meteorological data (the year with the highest modeled MGLC). Figures 3 and 4 show close-up looks of modeling results with the current and proposed scenarios, centered at the facility with the closest four residential areas labeled. The MGLCs of the four closest residential areas are shown in Table 2. The number of households affected by 10 times of AAC (blue lines on Figures 1 to 4) was reduced from approximately 1,000 with the current emissions scenario to approximately 600 with the proposed emissions scenario.

**Table 1. Modeled Highest 5-year MGLCs from the Current and Proposed Scenarios and the Respective AACs.**

Averaging period	MGLC ( $\mu\text{g}/\text{m}^3$ ) Current Scenario*	MGLC ( $\mu\text{g}/\text{m}^3$ ) Proposed Scenario <sup>#</sup>	AAC ( $\mu\text{g}/\text{m}^3$ )
Annual	1.5	0.16	0.00033
15-min	39	1.4	900

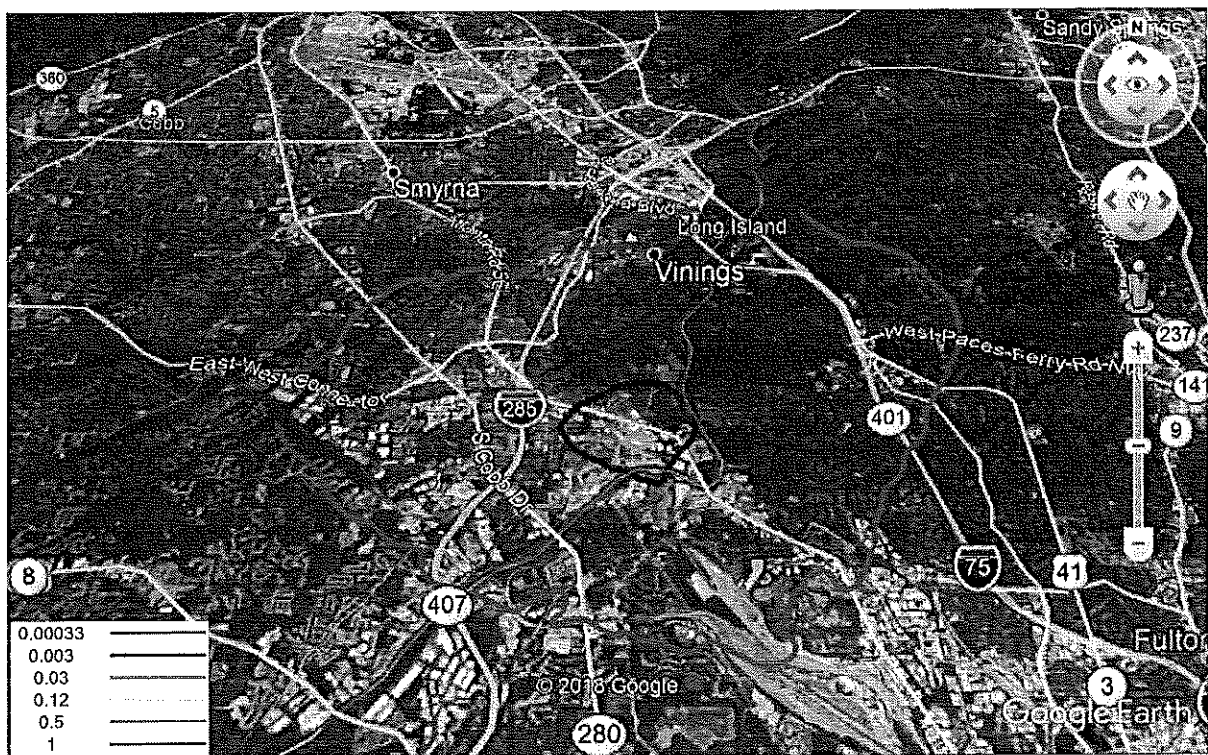
\* The highest concentration over all averaging periods was modeled in 2016.

<sup>#</sup> The highest concentration over all averaging periods was modeled in 2017.

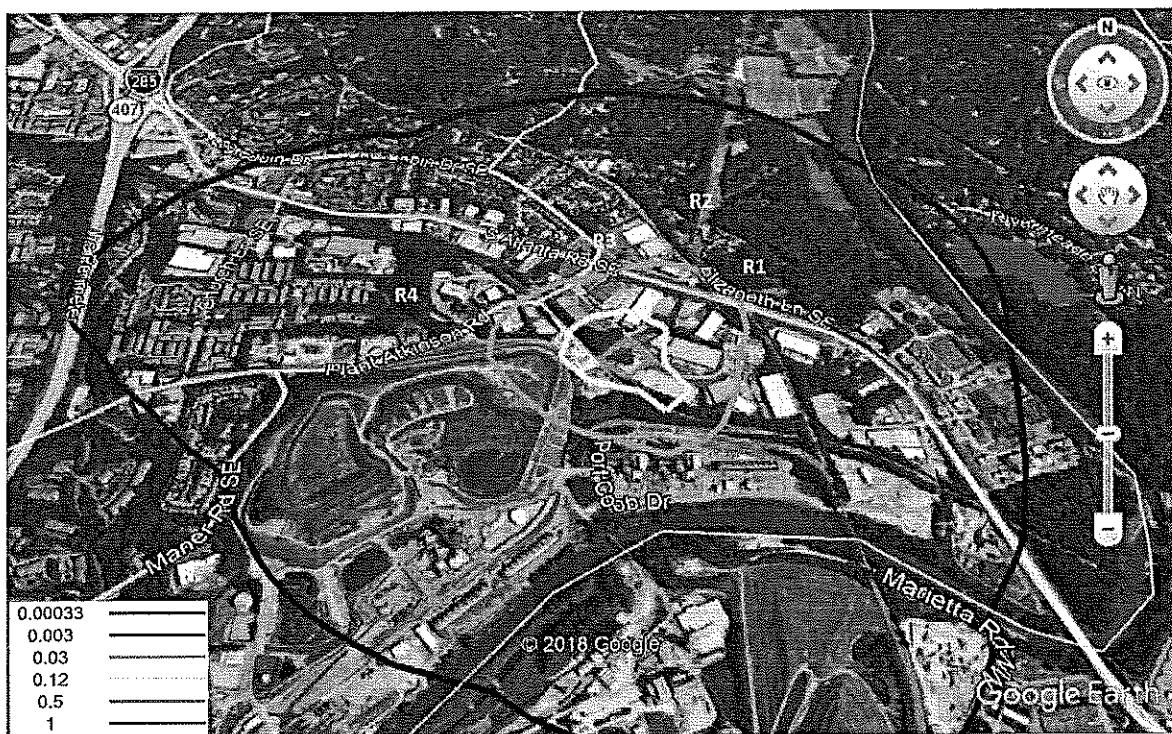


**Figure 1.** Contours of annual average ground-level concentrations modeled with the current emission scenario overlaid on a Google Earth map for 2016 (the year with the highest modeled MGLC).





**Figure 2.** Contours of annual average ground-level concentrations with the proposed emission scenario overlaid on a Google Earth map for 2017 (the year with the highest modeled MGLC).



**Figure 3.** A close-up look of Figure 1 with the closest residential areas labeled.

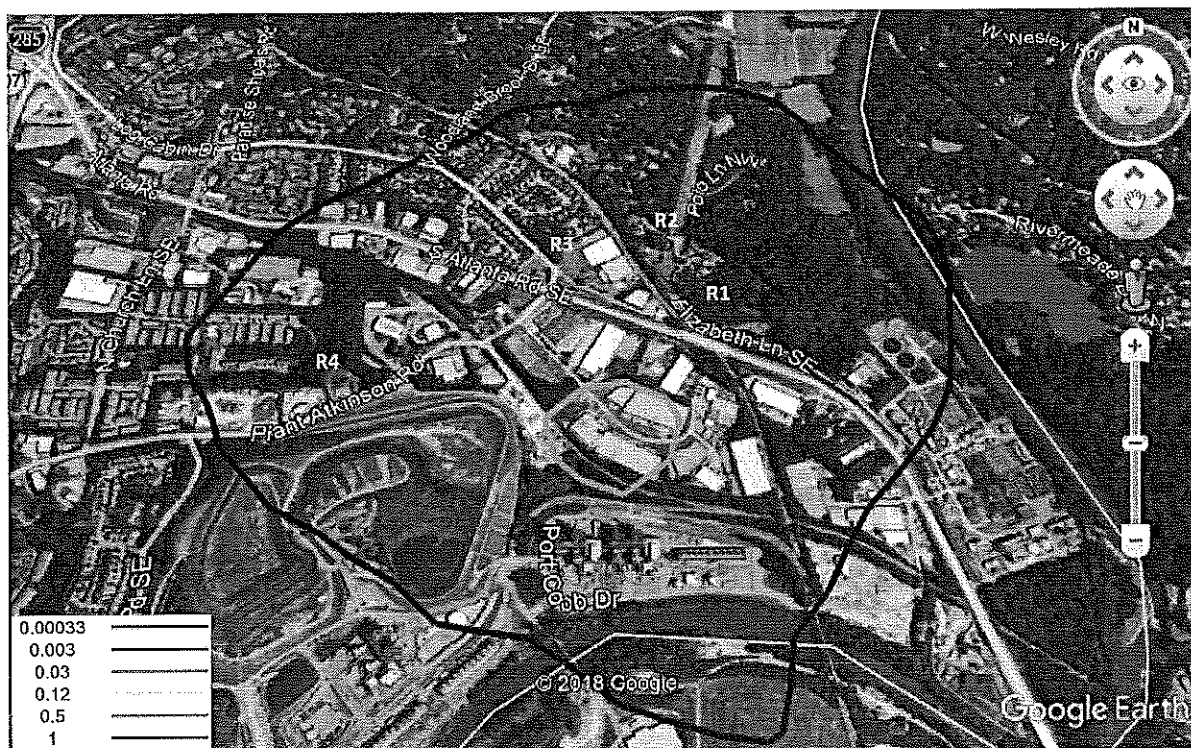


Figure 4. A close-up look of Figure 2 with the closest residential areas labeled.

Table 2. Risk Analysis for Residential Areas with Modeled Highest 5-year MGLCs.

Residential Areas	Receptor UTM Zone:16		MGLC ( $\mu\text{g}/\text{m}^3$ )		Averaging Period	AAC ( $\mu\text{g}/\text{m}^3$ )	Ratio of MGLC ( $\mu\text{g}/\text{m}^3$ ) to AAC ( $\mu\text{g}/\text{m}^3$ )	
	Easting (meter)	Northing (meter)	Current Scenario*	Proposed Scenario#			Current Scenario	Proposed Scenario
R1	734,456.40	3,746,827.10	0.020	0.008	Annual	0.00033	61	24
R2	734,349.30	3,746,923.70	0.015	0.007	Annual	0.00033	45	21
R3	734,073.40	3,746,829.10	0.017	0.007	Annual	0.00033	52	21
R4	733,449.70	3,746,572.40	0.009	0.004	Annual	0.00033	27	12

\* The highest concentration over all averaging periods was modeled in 2016.

# The highest concentration over all averaging periods was modeled in 2017.

### Analysis with 5-Year Average Ground-level Concentrations

To further assess the impact over longer period, maximum values from the 5-year averaged ground-level concentrations from the two modeling scenarios are summarized in Table 3. Contours of modeled annual ground-level concentrations averaged over the 5-year period are shown in Figures 5 and 6. Figures 7 and 8 show close-up looks centered at the facility with the closest four residential areas labeled. The 5-year averaged modeled ground-level concentrations of the four closest residential areas are shown in Table 4.

**Table 3. Modeled 5-year Annual Average Ground-level Concentrations from the Current and Proposed Scenarios and the Respective AAC.**

Averaging period	MGLC ( $\mu\text{g}/\text{m}^3$ ) Current Scenario <sup>a</sup>	MGLC ( $\mu\text{g}/\text{m}^3$ ) Proposed Scenario <sup>a</sup>	AAC ( $\mu\text{g}/\text{m}^3$ )
Annual	1.4	0.15	0.00033

\* The maximum of ground-level concentration averaged over 5 years.

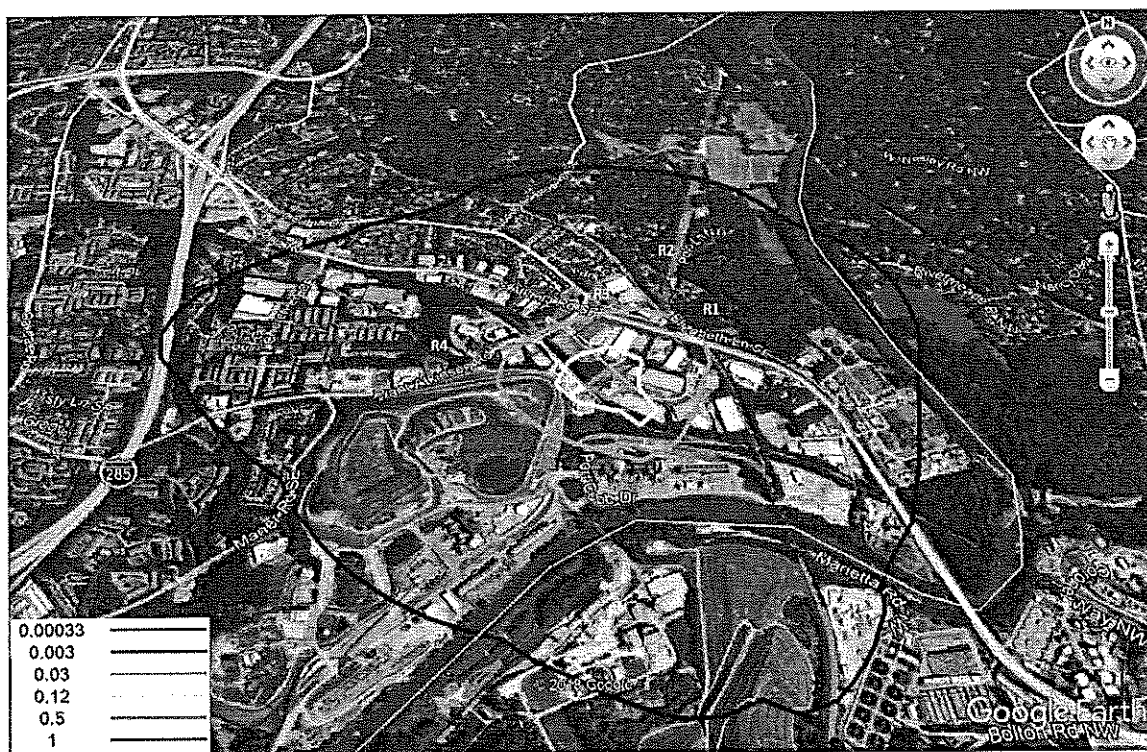


**Figure 5.** Contours of 5-year annual average ground-level concentrations modeled with the current emission scenario overlaid on a Google Earth map.





**Figure 6.** Contours of 5-year annual average ground-level concentrations modeled with the proposed emission scenario overlaid on a Google Earth map.



**Figure 7.** A close-up look of Figure 5 with the closest residential areas labeled.

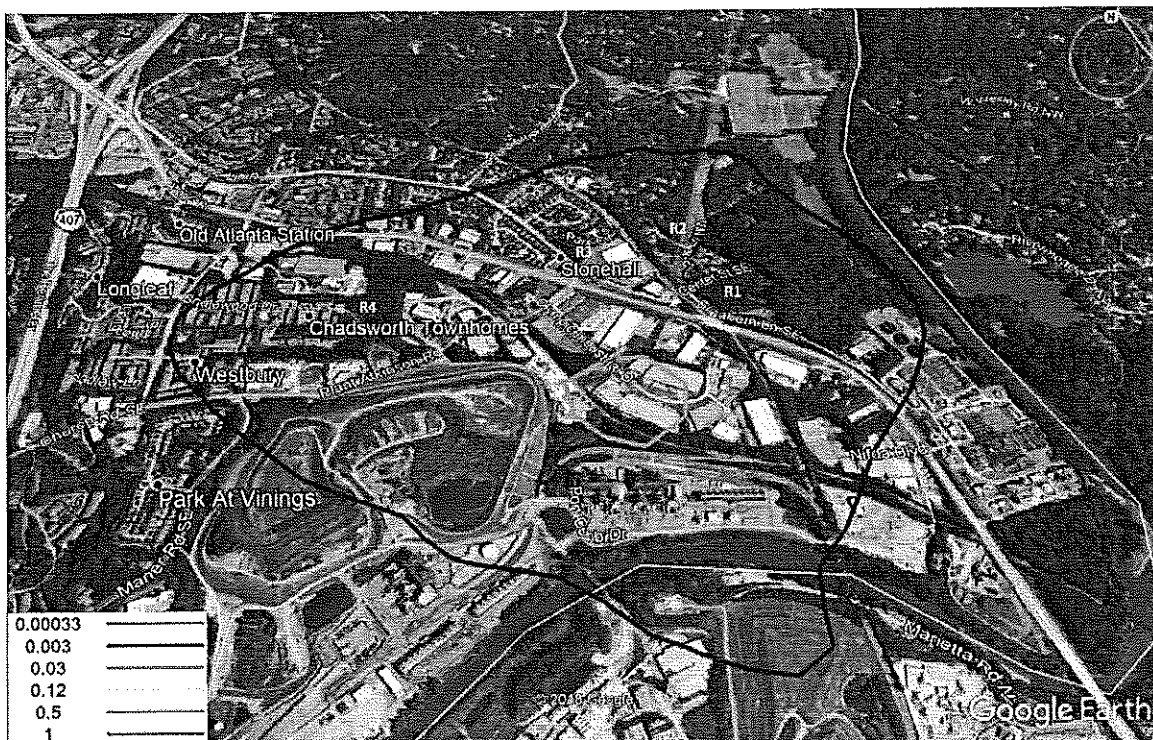


Figure 8. A close-up look of Figure 6 with the closest residential areas labeled.

Table 4. Risk Analysis for Residential Areas with 5-year Average Ground-level Concentrations.

Residential Areas	Receptor UTM Zone:16		Ground-level Concentration ( $\mu\text{g}/\text{m}^3$ )		Averaging Period	AAC ( $\mu\text{g}/\text{m}^3$ )	Ratio of Ground-level Concentration ( $\mu\text{g}/\text{m}^3$ ) to AAC ( $\mu\text{g}/\text{m}^3$ )	
	Easting (meter)	Northing (meter)	Current Scenario	Proposed Scenario			Current Scenario	Proposed Scenario
R1	734,456.40	3,746,827.10	0.020	0.007	Annual	0.00033	61	21
R2	734,349.30	3,746,923.70	0.015	0.006	Annual	0.00033	45	18
R3	734,073.40	3,746,829.10	0.017	0.006	Annual	0.00033	52	18
R4	733,449.70	3,746,572.40	0.009	0.005	Annual	0.00033	27	15

## CONCLUSIONS

The dispersion modeling analysis for ethylene oxide shows exceedances at the annual AAC level with the current and proposed emission scenarios. The risk assessment with the current emission scenario indicates that residential areas are well above the AAC level (27-61 times). The risk at residential areas is reduced by approximately 50% with the proposed scenario, but the modeled impacts are still well above the AAC (12-24 times).

# **Appendix A**

## Current Emissions and Model Input Parameters

### Ethylene Oxide (EtO) Emissions

Emission Source	2017 EtO Emissions (lb/yr)
AAT Scrubber	13.72
Ceillcote Scrubber	3.98
Fugitives	188.39

### Model Input Parameters for EtO Emissions Sources

Model ID	Stack Description	Source Type	UTM E <sup>1</sup> (m)	UTM N <sup>1</sup> (m)	Elevation <sup>2</sup> (m)	Modeled EtO Emissions <sup>3</sup> (g/s)	Stack Height		Stack Temperature		Exhaust Gas Flow Rate (cfm)	Exit Velocity		Stack Diameter	
							(ft)	(m)	(°F)	(K)		(ft/s)	(m/s)	(ft)	(m)
STK1	AAT Scrubber	POINT	734,253.6	3,746,381.0	251.59	1.97E-04	51.0	15.54	98	309.82	12,000	46.8	14.256	2.3	0.71
STK2	Ceillcote	POINT	734,232.1	3,746,355.7	250.08	5.72E-05	51.0	15.54	85	302.59	2,000	42.4	12.936	1.0	0.30
STK3	Roof Fan	POINT	734,267.9	3,746,355.2	251.21	6.02E-04	29.0	8.84	75	297.04	16,000	37.7	11.499	3.0	0.91
STK4	Roof Fan	POINT	734,256.7	3,746,361.0	251.07	6.02E-04	29.0	8.84	75	297.04	16,000	37.7	11.499	3.0	0.91
STK5	Wall Fan	POINTHOR	734,226.1	3,746,349.0	249.61	-	20.0	6.10	75	297.04	200	0.8	0.254	2.3	0.69
STK6	Wall Fan	POINTHOR	734,211.5	3,746,357.1	249.46	-	23.0	7.01	75	297.04	6,000	25.0	7.620	2.3	0.69
STK7	Wall Fan	POINTHOR	734,201.8	3,746,366.6	249.67	-	23.0	7.01	75	297.04	6,000	25.0	7.620	2.3	0.69
STK8	Wall Fan	POINTHOR	734,180.6	3,746,413.3	250.46	1.51E-04	4.8	1.47	75	297.04	5,985	21.3	6.477	2.4	0.75
STK9	Wall Fan	POINTHOR	734,189.0	3,746,420.2	250.93	1.51E-04	12.5	3.81	75	297.04	2,122	6.3	1.930	2.7	0.81
STK10	Wall Fan	POINTHOR	734,197.7	3,746,427.9	251.32	6.02E-04	13.5	4.11	75	297.04	409	20.7	6.299	0.6	0.20
STK11	Wall Fan	POINTHOR	734,201.8	3,746,431.4	251.61	6.02E-04	13.8	4.22	75	297.04	1,031	52.1	15.875	0.6	0.20
STK12	Wall Fan	POINTHOR	734,210.2	3,746,438.3	252.02	-	20.0	6.10	75	297.04	20,000	15.9	4.836	5.2	1.58

#### Notes:

- Coordinates reflect UTM NAD83, Zone 16.
- Modeled elevations were incorporated using AERMAP. Terrain elevation data was obtained using the National Elevation Data (NED) files from the USGS Multi-Resolution Land Characteristics Consortium (MRLC).
- Smoke testing conducted at the Atlanta facility has shown there are no EtO emissions released from the wall fans associated with STK5 through STK7 and from STK12.

## **Appendix B**

### Proposed Emissions and Model Input Parameters



# Ethylene Oxide (EtO) Emissions

Emission Source	2017 EtO Emissions (lb/yr)
AAT Scrubber	13.72
Ceilmate Scrubber	3.98
Fugitives	188.39

## Model Input Parameters for EtO Emissions Sources

Model ID	Stack Description	Source Type	UTM E <sup>1</sup> (m)	UTM N <sup>1</sup> (m)	Elevation <sup>2</sup> (m)	Modeled EtO Emissions <sup>3</sup> (g/s)	Stack Height		Stack Temperature		Exhaust Gas Flow Rate (cfm)	Exit Velocity		Stack Diameter	
							(ft)	(m)	(°F)	(K)		(ft/s)	(m/s)	(ft)	(m)
STK1	AAT Scrubber	POINT	734,253.6	3,746,381.0	251.59	1.97E-04	51.0	15.54	98	309.82	12,000	46.8	14.256	2.3	0.71
STK2	Ceilmate	POINT	734,232.1	3,746,355.7	250.08	5.72E-05	51.0	15.54	85	302.59	2,000	42.4	12.936	1.0	0.30
STK3	Roof Fan	POINT	734,267.9	3,746,355.2	251.21	6.02E-04	29.0	8.84	75	297.04	16,000	37.7	11.499	3.0	0.91
STK4	Roof Fan	POINT	734,256.7	3,746,361.0	251.07	6.02E-04	29.0	8.84	75	297.04	16,000	37.7	11.499	3.0	0.91
STK5	Wall Fan	POINTHORIZ	734,226.1	3,746,349.0	249.61	-	20.0	6.10	75	297.04	200	0.8	0.254	2.3	0.69
STK6	Wall Fan	POINTHORIZ	734,211.5	3,746,357.1	249.46	-	23.0	7.01	75	297.04	6,000	25.0	7.620	2.3	0.69
STK7	Wall Fan	POINTHORIZ	734,201.8	3,746,366.6	249.67	-	23.0	7.01	75	297.04	6,000	25.0	7.620	2.3	0.69
STK812A	Roof Stack A for Fugitive Emissions	POINT	734,206.0	3,746,414.0	251.18	7.53E-04	105.0	32.00	75	297.04	7,500	70.7	21.560	1.5	0.46
STK812B	Roof Stack B for Fugitive Emissions	POINT	734,197.0	3,746,410.0	250.80	7.53E-04	105.0	32.00	75	297.04	7,500	70.7	21.560	1.5	0.46

### Notes:

- Coordinates reflect UTM NAD83, Zone 16.
- Modeled elevations were incorporated using AERMAP. Terrain elevation data was obtained using the National Elevation Data (NED) files from the USGS Multi-Resolution Land Characteristics Consortium (MRLC).
- Smoke testing conducted at the Atlanta facility has shown there are no EtO emissions released from the wall fans associated with STK5 through STK7.

## **Appendix C**

GA EPD Calculation of the Annual and 15-min AAC  
for Ethylene Oxide

## GA EPD Calculation of the Annual and 15-min AAC for Ethylene Oxide

According to the GA EPD's *Guideline for Ambient Impact Assessment of Toxic Air Pollutant Emissions*, the annual and 15-min AAC for ethylene oxide are calculated as following:

### Annual AAC

In the EPA Integrated Risk Information System (IRIS)<sup>2</sup>, the Inhalation Unit Risk (IUR) for ethylene oxide is  $3 \times 10^{-3}$  per  $\mu\text{g}/\text{m}^3$ . Since ethylene oxide is carcinogenic to humans, it belongs to Group A<sup>3</sup> with a cancer risk of 1/1,000,000. Therefore, the annual AAC is calculated as:

$$\text{Annual AAC} = \text{Cancer Risk} / \text{IUR} = (1/1,000,000) / (0.003/\mu\text{g}/\text{m}^3) = \mathbf{0.00033 \mu\text{g}/\text{m}^3}$$

### 15-min AAC

The OSHA permissible exposure limit (PEL) for ethylene oxide is 5 ppm. To convert the PEL from ppm to  $\text{mg}/\text{m}^3$ , use the following conversion formula from the guidance:

$$(5 \text{ ppm} \times 44.05 \text{ g/mol}) / (24.45 \text{ L/mol}) = 9 \text{ mg}/\text{m}^3$$

where, 44.05 is the molecular weight for ethylene oxide and 24.45 is the molar volume at 25°C and 760 mmHg. After applying a safety factor of 10 for acute sensory irritants, the 15-min AAC is calculated as:

$$\text{15-min AAC} = 9 \text{ mg}/\text{m}^3 \times 1000 \text{ (convert mg to } \mu\text{g)} / 10 \text{ (safety factor)} = \mathbf{900 \mu\text{g}/\text{m}^3}$$

---

<sup>2</sup>[https://cfpub.epa.gov/ncea/iris/iris\\_documents/documents/subst/1025\\_summary.pdf](https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/1025_summary.pdf)

<sup>3</sup><https://www.epa.gov/fera/risk-assessment-carcinogenic-effects>

## **Appendix D**

### **EPA Calculation of the Annual AAC for Ethylene Oxide**

## EPA Calculation of the Annual AAC for Ethylene Oxide

According to EPA's IRIS, inhalation unit risk (IUR) for ethylene oxide (EtO) is  $3 \times 10^{-3}$  per  $\mu\text{g}/\text{m}^3$  (as discussed in Appendix C). However, because of the elevated risk due to the mutagenic mode of action through early-life exposures, EPA multiplied the IUR by 1.6:

$$\text{Modified IUR for EtO} = 3 \times 10^{-3} \text{ per } \mu\text{g}/\text{m}^3 \times 1.6 = 0.005/\mu\text{g}/\text{m}^3$$

EPA's NATA used (100/1,000,000) individual risk for the purpose of determining "acceptable risk" (AR) in their national assessment.

$$\text{AR Exposure Concentration} = \text{Cancer Risk} / \text{IUR} = (100/1,000,000)/(0.005/\mu\text{g}/\text{m}^3) = \mathbf{0.02 \mu\text{g}/\text{m}^3}$$

However, EPA uses (1/1,000,000) individual risk to incorporate an "ample margin of safety" (AMS) for setting emission standards<sup>4</sup> (e.g., benzene NESHAP).

$$\text{AMS Exposure Concentration} = \text{Cancer Risk} / \text{IUR} = (1/1,000,000)/(0.005/\mu\text{g}/\text{m}^3) = \mathbf{0.0002 \mu\text{g}/\text{m}^3}$$

---

<sup>4</sup>[https://www3.epa.gov/ttn/atw/risk/risk\\_rep.pdf](https://www3.epa.gov/ttn/atw/risk/risk_rep.pdf)

## Waldron, Sherry

---

**From:** Hays, Karen  
**Sent:** Thursday, June 27, 2019 8:46 AM  
**To:** Brown, Heather; Waldron, Sherry; Kuoh, Dika; Boylan, James  
**Cc:** Cornwell, Eric; Taylor, Sean  
**Subject:** FW: memo

---

**From:** Hoffman, Kathy <KHoffman@sterigenics.com>  
**Sent:** Thursday, June 27, 2019 8:40 AM  
**To:** Hays, Karen <Karen.Hays@dnr.ga.gov>  
**Subject:** RE: memo

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Thank you for forwarding this recent risk assessment for the Sterigenics Atlanta facility. As discussed, we continue to review additional EO improvements at our Atlanta and other EO facilities in connection with the recently changed EPA risk assessment. We are reviewing the installation of a capture and control system in our Atlanta facility to further reduce the fugitive emissions from the facility. In addition, we are monitoring USEPA's efforts to update the EO Sterilization NESHAP. I will share further details on this project once we have a preliminary design.

Kathy

Kathleen Hoffman  
Senior Vice President - Global Environmental, Health & Safety and Technical Services  
Sterigenics, A Sotera Health Company  
2015 Spring Road, Suite 650  
Oak Brook, IL 60523  
Office: 630.928.1758  
[khoffman@sterigenics.com](mailto:khoffman@sterigenics.com)



---

**From:** Hays, Karen [<mailto:Karen.Hays@dnr.ga.gov>]  
**Sent:** Friday, June 14, 2019 3:15 PM  
**To:** Hoffman, Kathy  
**Subject:** [EXTERNAL] memo

Karen Hays  
Chief, Air Protection Branch  
Georgia Environmental Protection Division  
4244 International Parkway, Suite 120  
Atlanta, GA 30354  
Office: 404-363-7016  
Mobile: 404-788-3955

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## Waldron, Sherry

**From:** Hays, Karen  
**Sent:** Tuesday, July 2, 2019 8:24 AM  
**To:** Boylan, James; Brown, Heather; Waldron, Sherry; Kim, Byeong  
**Cc:** Cornwell, Eric; Taylor, Sean; Kuoh, Dika  
**Subject:** FW: Sterigenics Atlanta Facility Improvements  
**Attachments:** Sterigenics Atlanta Improvements-1-Jul-2019.pdf; Google Earth snap 25Jun19.pptx

I talked to Kathy yesterday. They plan to move forward with a project to route all fugitive emissions through a control device, along with a few other modifications.

**From:** Hoffman, Kathy <KHoffman@sterigenics.com>  
**Sent:** Monday, July 1, 2019 6:44 PM  
**To:** Hays, Karen <Karen.Hays@dnr.ga.gov>  
**Subject:** Sterigenics Atlanta Facility Improvements

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Thank you for discussing our proposed environmental improvements at the Sterigenics Atlanta facility. As discussed Friday, we are now proposing to do the following emission reduction improvements:

- 1) Route vacuum pump emissions from the Ceilcote scrubber stack to the AAT scrubber, which will further reduce vacuum pump emissions by 99%;
- 2) Route AAT stack emissions to one of the 80' roof stacks (18" diameter)
- 3) Install a fugitive emission capture system and route all indoor emissions through a new dry bed system. Emissions from the dry beds will be routed to the second 80' stack on the roof (24" diameter).

We have done some preliminary dispersion modelling for these proposed improvements and obtained the following results:

### Results

Pollutant	Averaging Period	Receptor Type	Maximum Receptor ID	UTM E (m)	UTM N (m)	Con (
EtO	Period	Commercial/Industrial	D257	734,328.2	3,746,286.7	
		Residential/Sensitive	D167	734,078.2	3,746,836.7	

Attached is a revised emission data summary for modeling and a roof map. Let me know if you need any further information on these improvements or the dispersion model results.

We would like to get started with these improvements as soon as possible. If available, it might be good to schedule a call this week to discuss next steps that are needed to begin these projects.

Regards,  
Kathy

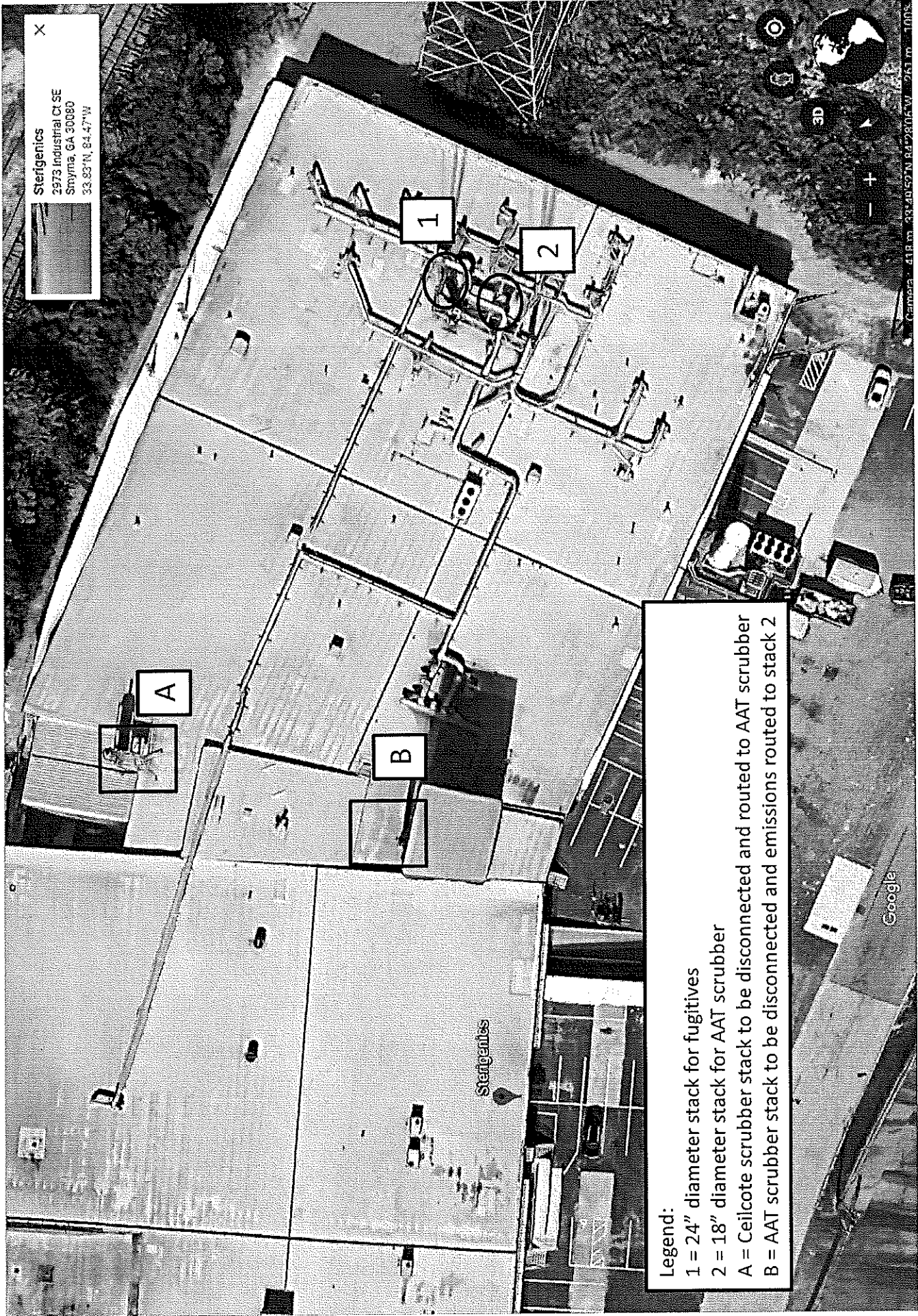
Kathleen Hoffman  
Senior Vice President - Global Environmental, Health & Safety and Technical Services



Sterigenics, A Sotera Health Company  
2015 Spring Road, Suite 650  
Oak Brook, IL 60523  
Office: 630.928.1758  
[khoffman@sterigenics.com](mailto:khoffman@sterigenics.com)



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X  
Sterigenics  
2973 Industrial Ct SE  
Smyrna, GA 30080  
33.83°N, 84.47°W

Legend:  
1 = 24" diameter stack for fugitives  
2 = 18" diameter stack for AAT scrubber  
A = Ceilcote scrubber stack to be disconnected and routed to AAT scrubber  
B = AAT scrubber stack to be disconnected and emissions routed to stack 2

Google

**Proposed Emission Improvements**  
Sterigenics Atlanta Facility

**Proposed Emissions**

Control Device	Efficiency	Stack Diameter (ft)	Stack Height (ft)	Temp (F)	Flow SCFM	Flow (ft <sup>3</sup> /sec)	Flow (m/sec)	Proposed Emissions (#/yr)	Emission rate (gram/sec)
AAT	99.833%	1.5	80	98	12000	113.17	0.57	35.49	0.000510525
Cealcote	99.9990%	routed thru AAT							
Fugitives	99%	2	80	70	18000	95.5	0.49	2.13	3.05646E-05

Assume EO usage: 425000 lb

AAT Efficiency is from most recent stack test of backvents (lower efficiency)

Cealcote Efficiency is from most recent stack test

Fugitive Control Efficiency is design

## Waldron, Sherry

---

**From:** Boylan, James  
**Sent:** Tuesday, July 2, 2019 3:51 PM  
**To:** Hays, Karen; Brown, Heather; Waldron, Sherry; Kim, Byeong  
**Cc:** Cornwell, Eric; Taylor, Sean; Kuoh, Dika; Zhang, Henian  
**Subject:** RE: Sterigenics Atlanta Facility Improvements  
**Attachments:** Sterigenics\_Modeling\_Memo\_06\_07\_2019.docx

Karen,

Can we request updates to two tables shown in Appendix A in our modeling analysis (page 10) in order to verify the emissions and set up the model? Do you want to make the request or should I?

Thanks!!  
Jim

---

**From:** Hays, Karen  
**Sent:** Tuesday, July 2, 2019 8:24 AM  
**To:** Boylan, James <James.Boylan@dnr.ga.gov>; Brown, Heather <heather.brown@dnr.ga.gov>; Waldron, Sherry <Sherry.Waldron@dnr.ga.gov>; Kim, Byeong <Byeong.Kim@dnr.ga.gov>  
**Cc:** Cornwell, Eric <Eric.Cornwell@dnr.ga.gov>; Taylor, Sean <Sean.Taylor@dnr.ga.gov>; Kuoh, Dika <Dika.Kuoh@dnr.ga.gov>  
**Subject:** FW: Sterigenics Atlanta Facility Improvements

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**To:** Hays, Karen <Karen.Hays@dnr.ga.gov>  
**Subject:** Sterigenics Atlanta Facility Improvements

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We would like to get started with these improvements as soon as possible. If available, it might be good to schedule a call this week to discuss next steps that are needed to begin these projects.

Regards,  
Kathy

Kathleen Hoffman  
Senior Vice President - Global Environmental, Health & Safety and Technical Services  
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Office: 630.928.1758  
[khoffman@sterigenics.com](mailto:khoffman@sterigenics.com)



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## Waldron, Sherry

---

**From:** Hays, Karen  
**Sent:** Thursday, July 25, 2019 1:12 PM  
**To:** Waldron, Sherry; Cornwell, Eric  
**Subject:** FW: EPA Statement on Sterigenics/Smyrna, GA, for 11Alive News

---

**From:** Mitchell, Ken <Mitchell.Ken@epa.gov>  
**Sent:** Tuesday, July 23, 2019 4:05 PM  
**To:** Hays, Karen <Karen.Hays@dnr.ga.gov>  
**Cc:** Kemker, Carol <Kemker.Carol@epa.gov>; Mitchell, Ken <Mitchell.Ken@epa.gov>; Jenkins, Brandi <Jenkins.Brandi@epa.gov>; Myers, Bryan <Myers.Bryan@epa.gov>; Davis, Alison <Davis.Alison@epa.gov>; Harris-Young, Dawn <Harris-Young.Dawn@epa.gov>  
**Subject:** EPA Statement on Sterigenics/Smyrna, GA, for 11Alive News

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Karen....please find below the statement we sent today to 11Alive News. Please let me know if you have any questions.

---

Kenneth L. Mitchell, Ph.D. | Deputy Director |  
Air and Radiation Division  
U.S. Environmental Protection Agency | 61 Forsyth Street, SW | Atlanta, GA 30303  
Voice: 404-562-9065 | Fax: 404-562-9066 | Email: [mitchell.ken@epa.gov](mailto:mitchell.ken@epa.gov)

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### Statement:

Since NATA was released in August 2018, US EPA has been working with its state partners to gather additional information on industrial emissions of ethylene oxide. The State of Georgia has been working with Sterigenics and Becton Dickinson (BD) to better understand their emissions and to evaluate what those emissions may mean for surrounding communities. EPA's evaluation of Georgia's recent modeling analyses of emissions from these two facilities indicates that risk from EtO concentrations in residential areas does not exceed 100-in-1 million (1 in 10,000), which EPA uses in regulations as a general guide for determining the maximum acceptable lifetime cancer risk.

### Background:

EPA's National Air Toxics Assessment (NATA) is a screening tool, intended to help EPA and state, local and tribal air agencies determine if areas, pollutants or types of pollution sources need to be examined further to better understand risks to public health. The most recent NATA, released in August 2018, is based on emissions information from 2014, the most recent available at the time the assessment was conducted.

The Sterigenics facility in Smyrna, GA, has added emissions controls that reduced ethylene oxide emissions by over 90% (2017 estimates) and is currently working to install additional controls. Upon closer examination, emissions at the BD facility in Covington, GA, are less than those used to develop the 2014 NATA.

EPA is taking a two-pronged approach to address ethylene oxide emissions.

- 1) The Agency is reviewing Clean Air Act regulations for facilities that emit ethylene oxide. EPA has begun reviewing its air toxics emissions standards for miscellaneous organic chemical manufacturing facilities, some of which emit ethylene oxide, and its air toxics rules for ethylene oxide commercial sterilizers. The agency expects to propose updates to both rules this summer.
- 2) EPA also is gathering additional information on industrial emissions of ethylene oxide. This information will help EPA as it evaluates opportunities to reduce ethylene oxide emissions as part of its regulations review. It also will help the Agency determine whether more immediate emission reduction steps are necessary in any particular locations.

**Waldron, Sherry**

---

**From:** Chambers, Kevin  
**Sent:** Thursday, July 25, 2019 3:02 PM  
**To:** EPDDL  
**Subject:** Statement from the Georgia Environmental Protection Division Regarding Ethylene Oxide  
**Attachments:** Georgia\_EPD\_Statement\_Ethylene\_Oxide.pdf



## **Statement from the Georgia Environmental Protection Division Regarding Ethylene Oxide**

July 25, 2019

The Georgia Environmental Protection Division (EPD) is working closely with two suburban Atlanta companies that have agreed to implement additional voluntary improvements in their control of ethylene oxide gas.

Sterigenics in Smyrna and Beckton Dickinson (BD) in Covington use the gas to sterilize medical equipment such as surgical equipment and catheters. The facilities are located in areas where the U.S. Environmental Protection Agency (EPA) identified potentially greater cancer risks. The chemical of concern was ethylene oxide.

The information was included in the 2014 National Air Toxics Assessment (NATA), which was completed and released by EPA in August 2018. The new findings are not due to new sources or increased amount of ethylene oxide being released into the atmosphere. Rather, it is because in late 2016, EPA determined that the risk of long-term exposure to ethylene oxide is greater than previously thought and updated the risk calculations. The NATA is designed to help identify which areas require further study given our evolving knowledge about air toxics.

Since the 2014 NATA was released, EPD has been working to better assess and address risk concerns. Using current emissions data, EPD has performed modeling to estimate ethylene oxide concentrations in the areas around both facilities. The EPA evaluation of Georgia's recent modeling analyses indicates that risk from ethylene oxide concentrations in residential areas does not exceed 100-in-1 million (1 in 10,000). The EPA uses that number in regulations as a general guide for determining the maximum acceptable lifetime cancer risk.

The risk estimates from NATA are for chronic exposure to air toxics over many decades. Though NATA does not estimate short-term (acute) or immediate risks, EPA did note that the ethylene oxide levels in these areas were not likely high enough to cause immediate harm to health.



Both Sterigenics and BD are in compliance with current federal requirements for control of ethylene oxide emissions. Both facilities conduct periodic testing, which is monitored by EPD. Also, both facilities are currently emitting significantly less ethylene oxide than assumed in the 2014 NATA. EPA has announced that they intend to review the federal regulations to determine if additional controls are required.

We expect EPA to propose additional controls this summer based on the 2014 NATA findings. Until regulatory requirements can keep up with the evolving science, EPD will continue to work with both facilities on voluntary measures to further reduce ethylene oxide.

Contact Information:

News Media Contact: Kevin Chambers (404) 651-7970



# GEORGIA

DEPARTMENT OF NATURAL RESOURCES

## ENVIRONMENTAL PROTECTION DIVISION

**Richard E. Dunn, Director**

---

**EPD Director's Office**

2 Martin Luther King, Jr. Drive  
Suite 1456, East Tower  
Atlanta, Georgia 30334  
404-656-4713

July 25, 2019

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News Media Contact: Kevin Chambers (404) 651-7970



# GEORGIA

DEPARTMENT OF NATURAL RESOURCES

## ENVIRONMENTAL PROTECTION DIVISION

**Richard E. Dunn, Director**

---

**Air Protection Branch**

4244 International Parkway

Suite 120

Atlanta, Georgia 30354

404-363-7000

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**  
7007 0220 0004 2246 3326

August 2, 2019

Ms. Kathleen Hoffman  
Senior Vice President – Global Environmental, Health & Safety and Technical Services  
Sterigenics U.S. LLC  
2015 Spring Road, Suite 650  
Oak Brook, IL 60523

**RE: Proposed Consent Order**  
Sterigenics U.S. LLC, Atlanta

Dear Ms. Hoffman:

The Division has requested that Sterigenics further reduce emissions of ethylene oxide at the Facility located in Cobb County, Georgia. The Company has agreed to this request and submitted a permit application to further reduce emissions on July 30, 2019. The Division is proposing the enclosed Consent Order to establish an enforceable agreement. Please provide the necessary signature and return the signed Order to the Division within 15 business days of receipt of this letter. You will be provided with a final executed copy of the Consent Order.

Thank you for your cooperation. If you have any questions or comments concerning this Consent Order, please contact Sherry Waldron at 404-362-4569 or [sherry.waldron@dnr.ga.gov](mailto:sherry.waldron@dnr.ga.gov).

Sincerely,

Sean Taylor  
Program Manager  
Stationary Source Compliance Program

SMT:sgw

Enclosure

AIRS No. 067-00093

**STATE OF GEORGIA  
DEPARTMENT OF NATURAL RESOURCES  
ENVIRONMENTAL PROTECTION DIVISION**

RE: Sterigenics U.S. LLC  
2971 Olympic Industrial Drive SE, Suite 116  
Atlanta, GA 30339  
Cobb County

Order No. EPD-AQC- 6980

**CONSENT ORDER**

**WHEREAS**, Sterigenics U.S. LLC (hereinafter "Respondent") operates an ethylene oxide and propylene oxide sterilization facility (hereinafter the "Facility") in Atlanta, Cobb County, Georgia; and

**AUTHORITY**

**WHEREAS**, under the "Georgia Air Quality Act" as amended O.C.G.A. § 12-9-1 et seq. (hereinafter the "Air Quality Act"), the General Assembly of Georgia designated the Director of the Georgia Department of Natural Resources, Environmental Protection Division, (hereinafter the "Director" and "Division") to administer the provisions of the Air Quality Act; and

**WHEREAS**, the Rules for Air Quality Control, Chapter 391-3-1, as amended, (hereinafter the "Rules") are authorized under O.C.G.A. § 12-9-5 of the Air Quality Act, were promulgated in accordance with the Administrative Procedure Act and are effective; and

**WHEREAS**, O.C.G.A. § 12-9-6 of the Air Quality Act assigns the Director the power to issue permits stipulating in each permit the conditions or limitations under which such permit was issued and the power to issue orders as may be necessary to enforce compliance with the provisions of the Air Quality Act and all rules and regulations promulgated there under; and

**WHEREAS**, O.C.G.A. § 12-9-6(b)(14) of the Air Quality Act provides that the Director shall have and may exercise the power and duty to encourage voluntary cooperation by persons and affected groups to achieve the purposes of the Air Quality Act; and

**HISTORY**

**WHEREAS**, the Director issued Air Quality Permit No. 7389-067-0093-S-05-0 (hereinafter the "Permit") to Respondent on May 27, 2014, as amended, for the operation of the Facility; and

Sterigenics U.S. LLC  
Page 1 of 8

06700093

describes the planned modifications to the Facility, which include:

- Routing the vacuum pump emissions from the Celcote scrubber stack to the AAT scrubber, which will further reduce vacuum pump emissions by 99%;
- Routing the AAT stack emissions to one of the 80-foot roof stacks;
- Installing a fugitive emission capture system and routing all indoor emissions through a new dry-bed system. Emissions from the dry beds will be routed to the second 80-foot roof stack; and

**WHEREAS**, the permit application included an Air Toxics Ambient Impact Assessment; and

**CONDITIONS**

**WHEREAS**, both Respondent and the Division agree to the permit condition modifications and additional emission reductions as described in the terms and Conditions of this Order; and

**NOW THEREFORE**, before taking any testimony and without adjudicating the merits of the parties' position in this matter, and without admission or assignment of liability by or to Respondent, the parties hereby resolve the issues in this case by agreement and upon the order of the Director and the consent of Respondent as follows:

1. As soon as possible and, in any case, within 30 days of execution of this Order, Respondent shall commence construction on planned modifications to the Facility and provide to the Division written notification of the date on which construction will commence accompanied by a detailed schedule for construction completion. Additional time may be added to the schedule for any delays in obtaining all required permits and authorizations from local governmental entities. A written report providing a description of any such delays will be submitted to the Division within seven days of such occurrence.
2. All equipment listed in permit application 27153 shall be installed and operational within 24 weeks of commencing construction.

plan, report or schedule, required by this Order, the Division shall review the submission to determine its sufficiency. The Division shall notify Respondent in writing whether the submission is approved or disapproved.

If the Division determines that the submission is disapproved, it shall provide Respondent with a written notice of the deficiencies of the submission. Respondent shall have thirty (30) days from the issuance of the Division's notice of deficiency to modify the submission to correct the deficiencies and resubmit it to the Division. If Respondent does not agree with the Division's initial determination, Respondent shall submit in writing to the Division the grounds for its objection(s) within fifteen (15) days from the issuance of the Division's notice of deficiency. The parties shall confer in an attempt to resolve any disagreement. If no such resolution is reached within thirty (30) days from the date of Respondent's written objection(s), Respondent shall be required to modify its submission in accordance with the Division's comments.

Notwithstanding the foregoing, the failure of Respondent to provide the Division with an ultimately approved submission on or before the specified due date, may, in the sole discretion of the Director, be deemed a violation of this Order. Upon approval by the Division, all submissions required by the terms of this Order are incorporated by reference into, and made a part of, this Order. Except as may be provided by this Order, noncompliance with the contents of such approved submissions shall be deemed noncompliance with this Order.

Division approval of any submission required by this Order is not intended as, nor shall such approval be construed as, certification by the Division that compliance with relevant state and federal laws, regulations, and permits will thereby be achieved, and such approval by the Division shall not provide Respondent with a defense to an enforcement action taken by the Director pursuant to violations of the same. Division approval of any submission is strictly limited to the technical aspects of the submission and is not intended as, nor shall it be construed as, approval or acceptance of any statements, assertions, or representations of fact, of opinion, or of a legal nature that are contained in the document.

impact and attempt to mitigate same. Any Force Majeure or Forces Majeure that cause the schedule to extend over sixty (60) consecutive days shall be noticed to the citizens of Atlanta, Smyrna, and Cobb County in a form to be determined by the Division.

If the Division determines that Force Majeure has occurred, the affected time for performance specified in this Consent Order shall be extended for a period of time equal to the delay resulting from such Force Majeure. Respondent shall exercise due diligence and adopt all reasonable measures to avoid or minimize any delay.

Additional Terms. This Order does not waive the Director's right to take enforcement action against Respondent or imply that the Director will not take such action, either for (1) failure to fully comply with the conditions of this Order, or (2) violations of any relevant requirements of this Order, the law, rules, and permit(s). Issuance of this Order does not waive the Director's right to use any violations, upon sufficient evidence, to show past violations in any enforcement proceeding.

This Order is executed and entered solely for the purpose of encouraging voluntary cooperation to achieve the purposes of the Air Quality Act and does not constitute a finding, adjudication, or evidence of a violation of any law, rule, or regulation by Respondent, and, by consenting to this Order, Respondent does not admit to any factual allegation contained herein or to any violations of State laws. In addition, this Order is not intended to create and it shall not be construed or otherwise deemed to recognize or create any claim, right, liability, estoppel, or waiver of rights in favor of any third-party or parties.

By agreement of the parties, this Order shall have the same force and binding effect as a Final Order of the Director, and shall become final and effective immediately upon its execution by the Director. The parties further agree that this Order shall not be appealable by Respondent, and Respondent hereby waives its right to initiate any administrative or judicial hearing on the terms and conditions of this Order.

## **Waldron, Sherry**

---

**From:** Waldron, Sherry  
**Sent:** Thursday, August 8, 2019 2:06 PM  
**To:** 'Ihartman'  
**Subject:** First Semiannual Report for 2019, Sterigenics, Airs. #067-00093

The Division has reviewed the report submitted for the January 1 through June 30, 2019 reporting period, received on August 1, 2019 and postmarked on July 30, 2019. The report is submitted to satisfy the reporting requirements of Conditions 7.4 and 7.7 of the facility's Georgia Air Quality Permit. The submittal indicates no deviations from compliance with Permit No. 7389-067-0093-S-05-0, as amended, and 40 CFR 63 Subpart O during the reporting period.

Thank you for your timely and complete submittal.

Sincerely,

Sherry Waldron  
Environmental Engineer  
Georgia Environmental Protection Division  
Air Protection Branch  
4244 International Pkwy.  
Ste. 120  
Atlanta, Georgia 30354  
(404)362-4569



**From:** Chambers, Kevin  
**Sent:** Friday, August 16, 2019 10:48 AM  
**To:** Chambers, Kevin  
**Subject:** News Release from Georgia EPD



## **Georgia EPD to Monitor Air Quality in Covington and Smyrna for Ethylene Oxide**

August 16, 2019

The Georgia Environmental Protection Division (EPD) is announcing today an air quality monitoring plan to measure ethylene oxide levels around two plants in suburban Atlanta. Sterigenics in Smyrna and BD in Covington use the gas to sterilize medical equipment.

The two facilities are located in census tracts identified by the U.S. Environmental Protection Agency (EPA) as having potentially elevated lifetime cancer risks. The findings about elevated risks due to ethylene oxide were not due to new emission sources or increased emissions. Rather it was due to EPA's finding that the long-term exposure to the gas may be more harmful than previously thought.

Air samples will be collected at each site every six days over the next several months. Four monitoring locations for each community are being chosen ranging in distance from a quarter mile to a mile from the company property, both upwind and downwind. Equipment will be in the field within the next few weeks. A commercial laboratory will conduct the testing and results are expected in early November.

The EPD monitoring plan is focused on Smyrna and Covington, but the agency is also testing air in areas that are far from any permitted source of ethylene oxide. This is done for purposes of identifying baseline levels of air pollution in areas where there is no known source of ethylene oxide. EPD will use that information to get a better understanding of the facilities impact on air quality.

EPD has taken air samples at its South DeKalb Air Toxics Monitoring Station and has released results from the first sample. That sample identified levels of ethylene oxide associated with a higher lifetime cancer risk according to EPA's revised toxicity estimates. This initial result suggests the presence of ethylene oxide not associated with an industrial source and is consistent with findings in other states. EPD is working with EPA to better understand non-industrial sources of ethylene oxide and will continue to collect regular air samples at the south DeKalb site and begin monitoring at a rural south Georgia location far from any industry or traffic in addition to monitoring in Covington and Smyrna.

Community meetings and open houses are scheduled in Smyrna on August 19 and in Covington on August 20. Officials from EPA, Georgia EPD, Georgia Department of Public Health and the Agency for Toxic

Substances and Disease Registry will be at the meetings to answer questions and provide information. Click on these links for details on the meetings:

Smyrna – <https://www.epa.gov/smyrna-eto/forms/sterigenics-smyrna-facility-open-ho...>

Covington - <https://www.epa.gov/covington-eto/forms/becton-dickinson-covington-facil...>

Working with EPD, Sterigenics and BD have agreed to voluntarily take actions to further reduce emissions. Both facilities are operating in compliance with current requirements.

EPD keeps a significant amount of information about ethylene oxide and the facilities that use it on its website at <https://epd.georgia.gov/ethylene-oxide-information>.

News Media Contact: Kevin Chambers (404) 651-7970

## Waldron, Sherry

---

**From:** Hays, Karen  
**Sent:** Saturday, August 17, 2019 1:49 PM  
**To:** Taylor, Sean; Brown, Heather; Waldron, Sherry; Cornwell, Eric; Damaske, Stephen  
**Cc:** Kuoh, Dika  
**Subject:** Fwd: Just an update - Sterigenics Permit

FYI

Sent from my iPhone

Begin forwarded message:

**From:** Amy Hughes <[amy@hughespublicaffairs.com](mailto:amy@hughespublicaffairs.com)>  
**Date:** August 17, 2019 at 10:41:26 AM EDT  
**To:** [karen.hays@dnr.ga.gov](mailto:karen.hays@dnr.ga.gov)  
**Subject:** Fwd: Just an update - Sterigenics Permit

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Karen,

I just wanted to make sure that you and your team were aware that Cobb County has issued the necessary construction permit for the emissions reduction project at Sterigenics.

Have a nice weekend.

Amy Haywood Hughes  
Hughes Public Affairs  
(912) 661-1792  
[Amy@hughespublicaffairs.com](mailto:Amy@hughespublicaffairs.com)

Begin forwarded message:

**From:** "Morris, Renee" <[Renee.Morris@cobbcounty.org](mailto:Renee.Morris@cobbcounty.org)>  
**Date:** August 15, 2019 at 4:00:02 PM EDT  
**To:** "'[amy@hughespublicaffairs.com](mailto:amy@hughespublicaffairs.com)'" <[amy@hughespublicaffairs.com](mailto:amy@hughespublicaffairs.com)>  
**Cc:** "Hosack, Robert" <[Robert.Hosack@cobbcounty.org](mailto:Robert.Hosack@cobbcounty.org)>  
**Subject:** Just an update - Sterigenics Permit

The permit is being issued as I send this e-mail.

**W. Renee Morris**  
Executive Secretary to the County Manager

## **Cobb County Government**

✉:: 100 Cherokee Street, Suite 300, Marietta, GA 30090-7000

☎:: Direct (770) 528-2611 Fax (770) 528-2606

📧:: [renee.morris@cobbcounty.org](mailto:renee.morris@cobbcounty.org)



RECEIVED

AUG 26 2019

Air Protection  
Branch

Sherry  
pm  
8.26.19

August 26, 2019

Mr. Sean Taylor, Program Manager  
Georgia EPD – Air Protection Branch  
Stationary Source Compliance Program  
4244 International Parkway, Suite 120  
Atlanta, Georgia 30354

Subject: **Notification: Construction Commencement and Schedule for emission reduction project**

Dear Mr. Taylor

In accordance with Order Number EPD-AQC-6980, Sterigenics is providing notification of construction commencement of the emission reduction project for the Sterigenics Atlanta facility located at 2971 Olympic Industrial Drive, Suite 116, in Atlanta, Georgia.

Construction will start on the emission reduction project on Monday August 26 (Condition 1).

In addition, please find a construction schedule attached.

Please contact me at [lhartman@sterigenics.com](mailto:lhartman@sterigenics.com) or 630-928-1724, if you have any questions or need any additional information.

Warm Regards

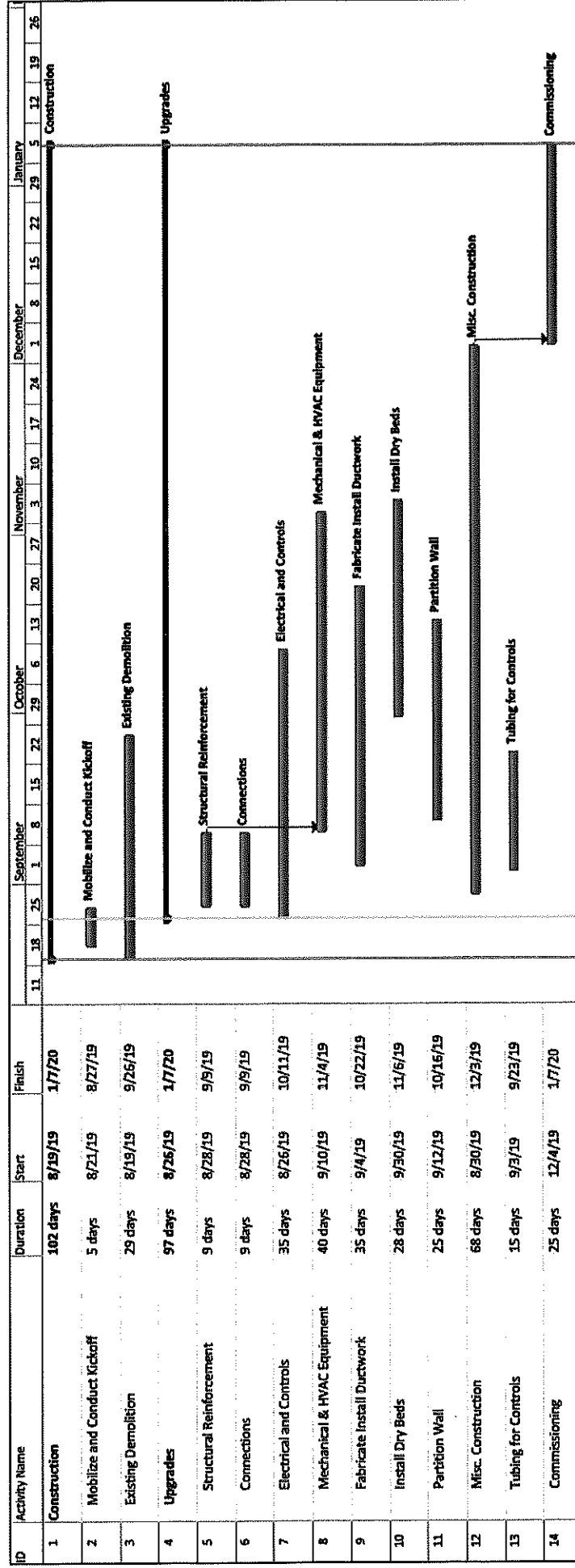
Laura Hartman  
EHS Manager

CC: General Manager, Sterigenics Atlanta Facility

067: 00093

# Sterigenics Atlanta Emission Reduction Project

## Construction Schedule



## **Waldron, Sherry**

---

**From:** Hays, Karen  
**Sent:** Thursday, August 29, 2019 3:38 PM  
**To:** AirDL  
**Subject:** EPD Press Statement Released August 28

EPD released this statement to the press yesterday:

On August 27, 2019, the Georgia Environmental Protection Division (EPD) received information regarding a potential past leak of ethylene oxide at the Sterigenics facility in Cobb County. EPD began its investigation that same day, including a visit to the facility by EPD inspectors and collection of detailed information.

The incident occurred on July 31, 2019, but was not reported to EPD. State law requires that Sterigenics report leaks of ethylene oxide if the quantity is unknown or if it is more than 10 pounds.

EPD's investigation is ongoing and information on its findings will be made available when the investigation is complete.

## Waldron, Sherry

---

**From:** Hays, Karen  
**Sent:** Friday, September 6, 2019 8:25 PM  
**To:** Waldron, Sherry; Taylor, Sean; Damaske, Stephen  
**Subject:** Fwd: AJC/litigation

Just FYI

Karen

Sent from my iPhone

Begin forwarded message:

**From:** "Chambers, Kevin" <[Kevin.Chambers@dnr.ga.gov](mailto:Kevin.Chambers@dnr.ga.gov)>  
**Date:** September 6, 2019 at 2:24:54 PM EDT  
**To:** "Dunn, Richard" <[richard.dunn@dnr.ga.gov](mailto:richard.dunn@dnr.ga.gov)>, "Curry, Lauren" <[lauren.curry@dnr.ga.gov](mailto:lauren.curry@dnr.ga.gov)>, "Hays, Karen" <[Karen.Hays@dnr.ga.gov](mailto:Karen.Hays@dnr.ga.gov)>, "Kuoh, Dika" <[Dika.Kuoh@dnr.ga.gov](mailto:Dika.Kuoh@dnr.ga.gov)>, "Williams, Laura" <[laura.williams@dnr.ga.gov](mailto:laura.williams@dnr.ga.gov)>, "Cooley, James" <[James.Cooley@dnr.ga.gov](mailto:James.Cooley@dnr.ga.gov)>  
**Subject:** AJC/litigation

## Sterigenics consent order with Georgia EPD faces legal challenge

18 minutes ago

By [Meris Lutz](#), The Atlanta Journal-Constitution

A state lawmaker wants a judge to invalidate an agreement between the Georgia Environmental Protection Division and a Cobb County plant that emits a carcinogenic gas.

The agreement, known as a consent order, requires the company to enhance emission control equipment at the facility.

Georgia Sen. Jen Jordan (D-Atlanta) filed a legal challenge to the agreement on Friday in Fulton Superior Court.

The challenge alleges Georgia EPD violated state law by not publicizing and accepting public comment on the Aug. 7 agreement with Sterigenics, a company that uses the toxic gas ethylene oxide to sterilize single-use medical devices in a facility near Smyrna.

Jordan is joined in her the legal challenge by two Cobb residents who live close to the plant.

One of the petitioners has been diagnosed with cancer, and the other lost her husband to the disease, according to the filing.

“They have all more likely than not breathed and continue to breathe that known carcinogen ... and/or they or family members have already suffered grievous injury as the result of cancer



which they believe to have been caused by [ethylene oxide] released by Sterigenics,” the filing says.

“Had the Petitioners’ legal right to provide comment not been interfered with by Georgia EPD’s failure to follow the law, they and others would have vocally contested various aspects of the Consent Order.”

A Sterigenics spokesman declined to comment on the filing. Company officials have appeared at town hall meetings in Cobb County and have consistently maintained that the plant’s operations do not pose risk to the surrounding community.

Sterigenics issued a press release Friday saying the company expects to complete installation of enhancements to further reduce emissions at the plant by the first week of October.

“At the request of Gov. Kemp and the EPD, Sterigenics has been working to expedite the installation of technology enhancements to our Atlanta facility and ... has been operating under a reduced production schedule,” the press release says. “The construction is proceeding ahead of schedule.”

EPD officials declined to comment on pending litigation, as did the Attorney General’s Office. But the EPD said last month that the consent order allows Sterigenics to install pollution control equipment right away while the state reviews a new permit application.

“EPD takes very seriously its mission to protect the health and safety of all Georgians and believes that this consent order and permit are the best next steps,” the EPD spokesperson said at the time.

The filing calls the state’s agreement with Sterigenics “startling” because it allows the company to continue operations that “pump carcinogenic [ethylene oxide] into the Petitioners’ neighborhoods, shopping centers, playgrounds, sports fields, and schools while EPD and Sterigenics were still trying to figure out how bad the issue really is and how to fix it (something that is still not known).”

A footnote in the filing references a consent order Sterigenics entered with the state of Illinois – an agreement that requires continuous air monitoring around Sterigenics’ plant in Willowbrook and sets “stringent” ethylene oxide emission limits, “none of which are required by or even addressed in the Georgia” consent order, the court filing says.

“If petitioners had been allowed to be heard, what the Georgia EPD and Sterigenics would have agreed to might have looked very different,” the filing says.

Some residents and officials, including Jordan, have been calling for Gov. Brian Kemp to shut down the plant.

The legal challenge comes the same week independent air testing began around the Cobb facility. The monitoring is being carried out by a private environmental consultant at a cost of about \$130,000, which will be split between Smyrna, Cobb County and the city of Atlanta.

The EPD has said it plans to do start its own testing in the next few weeks.

Disclosure: one of the residents named in the petition is an employee of the AJC's parent company, Cox Enterprises.

## Waldron, Sherry

---

**From:** Taylor, Sean  
**Sent:** Friday, September 6, 2019 4:59 PM  
**To:** Wagner, Kevin; Hays, Karen  
**Cc:** Hoffman, Kathy; Klaben, Matthew; Hartman, Laura; Waldron, Sherry; Damaske, Stephen  
**Subject:** RE: Sterigenics Work Practice Plan

Thank you Kevin. We will review this and either approve it or let you know if we have any questions or concerns within 30 days per the terms of the Consent Order.

Sean Taylor  
Program Manager  
Stationary Source Compliance Program  
Air Protection Branch  
Office Phone: 404-363-7047  
Mobile Phone: 404-665-7638  
Fax: 678-692-6872



---

**From:** Wagner, Kevin <KWagner@sterigenics.com>  
**Sent:** Friday, September 6, 2019 4:36 PM  
**To:** Taylor, Sean <Sean.Taylor@dnr.ga.gov>; Hays, Karen <Karen.Hays@dnr.ga.gov>  
**Cc:** Hoffman, Kathy <KHoffman@sterigenics.com>; Klaben, Matthew <MKlaben@soterahealth.com>; Hartman, Laura <lhartman@sterigenics.com>  
**Subject:** Sterigenics Work Practice Plan

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Sean-

Attached is the work practice plan as required as part of the consent order. I will also send hard copies via FedEx today. The procedure will be implemented as soon as practical and the document will go through our normal document review process for QA acceptance and formatting. Please let us know if the agency has any questions or feedback.

Regards,

Kevin Wagner  
Director, Environmental Health & Safety  
Sterigenics, A Sotera Health Company  
[kwagner@sterigenics.com](mailto:kwagner@sterigenics.com)  
O: 630-928-1771  
C: 708-860-9101



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SEP 09 2019

Air Protection  
Branch

September 6, 2019

Mr. Sean Taylor, Program Manager  
Georgia EPD – Air Protection Branch  
Stationary Source Compliance Program  
4244 International Parkway, Suite 120  
Atlanta, Georgia 30354

Subject: **Sterigenics Atlanta facility Work Practice Plan**

Dear Mr. Taylor

In accordance with Order Number EPD-AQC-6980, Sterigenics is providing a work practice plan for the Sterigenics Atlanta facility located at 2971 Olympic Industrial Drive, Suite 116, in Atlanta, Georgia.

Please contact me at [kwagner@sterigenics.com](mailto:kwagner@sterigenics.com) or 630-928-1771 for questions or additional information.

Regards,

Kevin Wagner  
Director, Environmental Health and Safety

Attachment: Work Practice Plan

CC: General Manager, Sterigenics Atlanta Facility

06700093

## **I. PURPOSE**

This work instruction describes the practices taken to help limit fugitive emissions from the EO sterilization process

## **II. SCOPE**

Covers the routine sterilization processing as well as non-routine tasks which could generate leaks, releases, or fugitive emissions of EO.

## **III. PROCESS OWNER**

Atlanta EO facility management

## **IV. APPLICATION**

This procedure applies to operations and areas of the facility where EO is used or contains sources which could emit EO including Chamber room, work aisle, emission control areas, aeration room, and the processed storage/shipping warehouse.

## **V. IMPLEMENTATION REQUIREMENTS**

All requirements of this procedure will be implemented on the effective date

## **VI. PROCEDURE**

### **REQUIREMENTS**

The Work Practice Plan is divided into two phases for implementation according to construction of the negative air system.

- A. Prior to final construction of the negative air system employees will ensure work practices are followed to minimize generation of EO fugitive emissions.
- B. Emission control systems will be utilized to the extent practical to capture and control EO fugitive emissions.
- C. The Advanced Air Technologies (AAT) scrubber/dry bed system will be inspected and tested frequently to ensure required efficiency is maintained.
- D. Enhanced reporting of confirmed Lower Explosive Limit (LEL) or Gas Chromatograph (GC) alarms which show a released amount of EO to the environment to local agencies.
- E. Initial and refresher training is required.
- F. Once new emission controls and negative pressure systems are installed, the facility will implement practices to ensure 100% of emissions are captured and all dry bed systems reduce emissions to an acceptable level:
  - 1. AAT dry beds will not exceed an outlet reading of 1ppm
  - 2. Negative pressure system dry beds will not exceed an outlet reading of 1ppm.

Sterigenics Atlanta  
EO Fugitives – Work Practice Plan

PROCEDURE

- A. Prior to installation of negative pressure system and dry beds:
1. Upon receipt of EO drums from supplier, employees will use work practices already in place (as described in G-WI-EO-OPS-013, EO Drums: Safe Storage and Handling) to ensure drums are in good condition with no leaks prior to being brought into the facility.
  2. The monitoring devices in the EO drum storage area will be operational to monitor for leaks.
  3. Program the setting for Chamber Door Interlock/VAPORS to lowest levels (5% LEL/3% Release levels)
  4. At the end of the sterilization cycle, the chamber door will be opened slightly and the operator must allow the backvents to run for a minimum of 15-minutes prior to unloading the sterile product.
  5. During unloading of the sterile product and transfer to aeration pallets will not be staged and will be taken directly from chamber to aeration through the facility additional personnel will be used to decrease the time taken to move the product through uncontrolled areas.
  6. When unloading sterilization chambers of product, remove and immediately transport pallets directly to the aeration room, and do not stage pallets in the aisle before transporting to aeration.
  7. Maximize, to the extent practicable, the duration that a product remains in aeration before removal, consistent with customer approvals and customer shipping demands for each particular product
  8. The Shipping warehouse doors will be kept closed unless in use for loading trailers. Only one dock door can be opened at a time.
  9. Maintenance personnel will ensure safe practices for isolating EO lines, inspection of equipment, are followed to prevent leaks/releases.
  10. Enhance the current capture and control equipment:
    - i. The AAT drybed unit will be tested weekly using current sample bags and analysis with GC. The measured level cannot exceed 1ppm.
    - ii. The barometric dampers in the sterilization chamber room exhaust to the AAT. The dampers will be used to the extent possible to capture any fugitive emissions in the area.
    - iii. Maintenance to ensure any deviations to scrubber or dry bed operation are reported immediately to Corporate EH&S (scrubber tank level, pH, flow, EO concentration)
- B. Reporting of EO Leaks and Releases
1. In addition to current procedures for detecting and assessing leaks or releases, the facility will immediately notify corporate EH&S of any high

level EO alarms so a joint investigation can be completed to determine quantity of the leak.

2. The affected part of the process will be stopped until the investigation is complete to ensure safety.
3. If the leaked amount of EO is determined to be > 10 lbs. or unknown within 15-minutes then an immediate notification to the National Response Center, Georgia EPD, the LEPC (Cobb County Fire Department) will be made.
  - a. Until the negative pressure system is installed, leaks will be reported to the LEPC and Georgia EPD regardless of amount.
4. When safe to do so, a complete investigation for each incident will be conducted to determine root cause with corrective actions
5. Follow-up reporting with each respective agency will be completed to report the final investigation report.

C. Training

1. Training to be provided to all employees on this work instruction within 30 days.
2. Annual training is required.

D. Operation and Maintenance of Negative Pressure System and Dry Beds

1. All facility dry beds:

- i. Dry bed media will be tracked to predict end of useful life in accordance with manufacturers recommendations based on EO usage.
- ii. In addition to the above, each dry bed system will be monitored weekly by taking an outlet sample with a Tedlar bag for 15-minutes. The sample will be analyzed with the GC and shall not exceed 1ppm
- iii. If a sample exceeds 1ppm a notification will be made to Corporate EH&S. A plan will be implemented to resample the system. If two consecutive samples are > 1ppm then the dry bed media will be changed out.
- iv. When dry bed media is changed out, each dry bed cell will be isolated from the system via damper valves. This will ensure the system can still operate with expected efficiency. The changeout of each bed will continue until all are complete.

2. Facility doors

- i. Doors to the facility will remain closed to ensure the negative pressure system is effective.
- ii. The facility will limit one dock door to be opened at a time. Dock seals will be installed to limit any openings around the docks while trailers are actively being loaded or unloaded.



Sterigenics Atlanta  
EO Fugitives – Work Practice Plan

3. Special emission control work practices in case of breakdown

- i. If an emission control system unexpectedly fails the process will be cycle stoped.
- ii. If the negative dry bed system fan fails the secondary blower fan will be put online to ensure continued operation of the system.
- iii. If the facility loses power, then EOP-001 Power Outages will be followed and handheld monitors will be used throughout the facility to measure any EO levels.

**VII. DEFINITIONS/ABBREVIATIONS**

N/A

**VIII. REVISION HISTORY**

Revision	Section	Description of Change
1	ALL	New work instruction

# FedEx Express

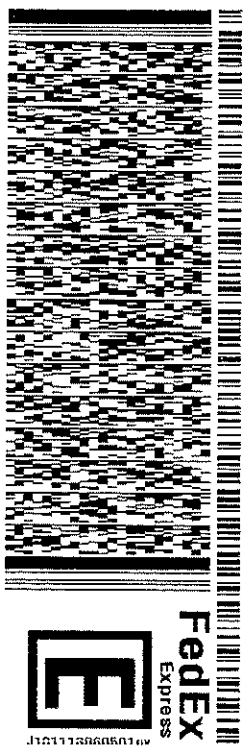
RT 946 1  
FZ 16:00 2030  
09.09

ORIGIN ID: ENLA  
MAGNER, KEVIN  
STERIGENICS  
2015 SPRING ROAD STE 850  
OAK BROOK, IL 60523  
UNITED STATES US

SHIP DATE: 06SEP19  
ACTWT: 0.15 LB  
CAD: 0442869/CATF3211

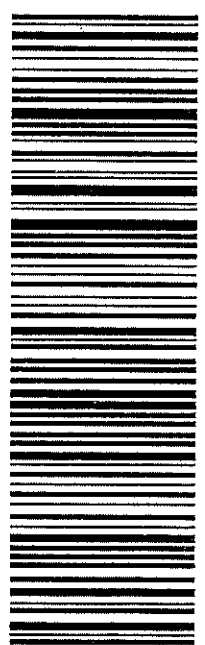
BILL SENDER

TO SEAN TAYLOR, PROGRAM MANAGER  
GEORGIA EPD - AIR PROTECTION BRANCH  
STATIONARY SOURCE COMPL PROGRAM  
4244 INTERNATIONAL PARKWAY, STE.120  
ATLANTA GA 30354  
(630) 928-1771  
DEPT. EH&S  
REF: ABSORB



TRK# 4801 2406 2030  
MON - 09 SEP 3:00P  
STANDARD OVERNIGHT

SE DBNA  
30354  
GA-US ATL



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SSCP



# GEORGIA

DEPARTMENT OF NATURAL RESOURCES

## ENVIRONMENTAL PROTECTION DIVISION

**Richard E. Dunn, Director**

**Air Protection Branch**

4244 International Parkway

Suite 120

Atlanta, Georgia 30354

404-363-7000

**SEP 10 2019**

Ms. Kathleen Hoffman  
Senior Vice President – Global Environmental, Health & Safety and Technical Services  
Sterigenics U.S. LLC  
2015 Spring Road, Suite 650  
Oak Brook, IL 60523

RE: **Consent Order No. EPD-AQC-6980**  
Sterigenics, U.S. LLC, Atlanta, Georgia

Dear Ms. Hoffman:

On August 26, 2019, the Division received the Notification of Construction and Schedule for the emission reduction project required by Consent Order No. EPD-AQC-6980. The notification and schedule provided appear to meet the requirements of Condition No. 1 of the Consent Order. The Division hereby approves the schedule as proposed.

Thank you for your cooperation. If you have any questions concerning this correspondence, please feel free to contact Sherry Waldron at 404-362-4569 or [Sherry.Waldron@dnr.ga.gov](mailto:Sherry.Waldron@dnr.ga.gov).

Sincerely,

Sean Taylor  
Program Manager  
Stationary Source Compliance Program

SMT:sgw

c: Daryl Mosby, Sterigenics

## **Waldron, Sherry**

---

**From:** Taylor, Sean  
**Sent:** Friday, October 4, 2019 11:24 AM  
**To:** Wagner, Kevin  
**Cc:** Hoffman, Kathy; Klaben, Matthew; Hartman, Laura; Mosby, Daryl; Waldron, Sherry; Hays, Karen; Kuoh, Dika; Damaske, Stephen  
**Subject:** RE: Sterigenics Work Practice Plan

The Division has reviewed the proposed Work Practice Plan and requests the following changes in order to ensure that negative pressure is maintained at the facility's operational areas:

- Provision for an initial verification of negative pressure while at least one rollup door is open, a trailer is backed up to the dock doors, and using dock door seals. Verification should include a measurement or smoke test along each outside wall of the facility, as well as the facility roof, where operational areas are located and there is a wall/roof penetration or opening.
- Addition of daily negative pressure verifications along all outside walls of the facility, either by airflow observations using a smoke test or similar visual method or using permanently installed differential pressure gauges.
- Provision for calibration, at least annually, of any pressure sensors.
- Addition of specifying the protocol for the sequence of using dock door seals and opening rollup doors during offloading/loading operations and associated training of affected employees.
- Protocols for additional verifications of negative pressure within the affected operational areas while any portion of those systems affecting air flow are inoperable.
- Addition of procedures to ensure all doors and openings to the facility are closed when the facility loses power.
- Provision for weekly visual inspection of the integrity of dock door seals.
- Provisions for recordkeeping/logs of the results of each inspection, observation, or measurement, and corrective actions taken for any adverse condition.

Within fifteen days of receipt of this e-mail, please modify the plan to address the comments above and submit the revised plan to the Division.

Please note that, in addition to the amendments above, the plan must be modified to be consistent with the amended air quality permit, when issued. Additional changes may be needed to the plan at that time and should also be submitted to the Division within fifteen days of such date.

Thank you for your cooperation. If you have any questions concerning this correspondence, please feel free to contact Sherry Waldron at 404-362-4569 or [Sherry.Waldron@dnr.ga.gov](mailto:Sherry.Waldron@dnr.ga.gov).

Sean Taylor  
Program Manager  
Stationary Source Compliance Program  
Air Protection Branch  
Office Phone: 404-363-7047  
Mobile Phone: 404-665-7638  
Fax: 678-692-6872

**From:** Wagner, Kevin <KWagner@sterigenics.com>  
**Sent:** Friday, September 6, 2019 4:36 PM  
**To:** Taylor, Sean <Sean.Taylor@dnr.ga.gov>; Hays, Karen <Karen.Hays@dnr.ga.gov>  
**Cc:** Hoffman, Kathy <KHoffman@sterigenics.com>; Klaben, Matthew <MKlaben@soterahealth.com>; Hartman, Laura <lhartman@sterigenics.com>  
**Subject:** Sterigenics Work Practice Plan

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Sean-

Attached is the work practice plan as required as part of the consent order. I will also send hard copies via FedEx today. The procedure will be implemented as soon as practical and the document will go through our normal document review process for QA acceptance and formatting. Please let us know if the agency has any questions or feedback.

Regards,

Kevin Wagner  
Director, Environmental Health & Safety  
Sterigenics, A Sotera Health Company  
[kwagner@sterigenics.com](mailto:kwagner@sterigenics.com)  
O: 630-928-1771  
C: 708-860-9101



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## ENVIRONMENTAL PROTECTION DIVISION

25  
**Richard E. Dunn, Director**

**Air Protection Branch**  
4244 International Parkway  
Suite 120  
Atlanta, Georgia 30354  
404-363-7000

October 9, 2019

Kathleen Hoffman  
Sr. Vice President of EH&S  
Sterigenics U.S., LLC  
2015 Spring Road, Suite 650  
Oak Brook, IL 60523

Re: Request for additional information regarding  
Application No. 27153 received July 31, 2019  
Sterigenics U.S., LLC, Atlanta, AIRS No: 06700093

Dear Kathy Hoffman:

I write to notify you that the Division requires additional information to evaluate the modifications Sterigenics proposed in Application No. 27153. Specifically, emissions testing under the new controls configuration is required as detailed in this letter and as authorized by Georgia Rules for Air Quality Control Chapter 391-3-1-.03(2)(c)<sup>1</sup> prior to issuance of a permit authorizing the proposed modifications. The Division also requires certain engineering analyses and documentation as detailed below. Please submit test plans to the Division for our review and approval. Upon receipt of the Division's approval of the test plans, and any necessary approvals from Cobb County, please conduct and complete the following testing/engineering analyses and provide written results/reports to the Division within 30 days after completion.

1. Ethylene oxide performance testing of the sterilization chamber vents. Conduct ethylene oxide (EtO) performance testing of the sterilization chamber vents (Source Codes SEV-1, SEV-2, SEV-3, SEV-4, SEV-5, SEV-6, SEV-7, SEV-8, SEV-10, SEV-11). Conduct the performance testing according to: the procedures listed in 40 CFR 63.7, the applicability of 40 CFR Part 63, Subpart O as identified in Table 1 of 40 CFR 63.360, the procedures listed in 40 CFR 63.363, and the test methods listed in 40 CFR 63.365. The test results will be used to establish the maximum ethylene glycol concentration, the maximum liquor tank levels, and maximum pH for the scrubbers. The test report shall list the control efficiency of the Ceilcote Scrubber, the AAT Scrubber System with Dry Bed Adsorber, and the total system. The test report shall

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<sup>1</sup> See Ga. Comp. R. & Regs. 391-3-1-.02 (c) which provides in relevant that, "as a condition for the issuance of an operating permit, the Director may require the applicant to conduct performance tests and monitoring and provide reports concerning operations, to demonstrate compliance with the Act and the rules and regulations. Such tests and monitoring shall be conducted, and such required reports submitted, in accordance with methods and procedures approved by the Director."

list the final exhaust mass emission rate of ethylene oxide. The tests for each system (Ceilcote and AAT) shall be conducted simultaneously.

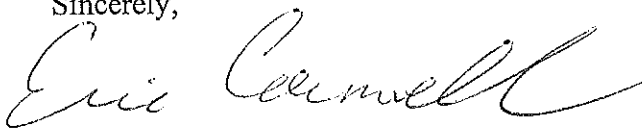
- a. Testing of the chamber vents should occur at the maximum loading. When you submit the test plan prior to testing, explain what conditions constitute "maximum loading." Sterigenics should expect that the chamber operating scenario during testing may be used to establish an operational limit in the permit (i.e. – limit the number of chambers operating at any given time). Record or otherwise document the maximum airflow of each chamber vacuum pump to ensure that combined airflow shall not exceed 1200 ACFM.
  - b. Explain why direct testing of the vacuum pump stream prior to the Ceilcote scrubber is not feasible.
2. Ethylene oxide performance testing on the sterilization chamber back vents and the aeration room vent. Conduct ethylene oxide performance testing on the sterilization chamber back vents (Source Codes CEV-1, CEV-2, CEV-3, CEV-4, CEV-5, CEV-6, CEV-7, CEV-8, CEV-10, CEV-11) and the aeration room vent (Source Code AR-1). The testing shall be conducted according to: the procedures listed in 40 CFR 63.7, the applicability of 40 CFR Part 63, Subpart O as identified in Table 1 of 40 CFR 63.360, the procedures listed in 40 CFR 63.363, and the test methods listed in 40 CFR 63.365. The test shall be used to establish the maximum ethylene glycol concentration, the maximum liquor tank level, and maximum pH for the AAT scrubber (Source Code EC2). The test report shall list the final exhaust mass emission rate of ethylene oxide.
  - a. Testing of the back vents and aeration room should occur at the maximum airflow, and loading, if possible.
3. Ethylene oxide performance testing of the Indoor Air System. Conduct ethylene oxide performance testing of the Indoor Air System (IA-1) according to: the procedures listed in 40 CFR 63.7, the applicability of 40 CFR Part 63, Subpart O as identified in Table 1 of 40 CFR 63.360, the procedures listed in 40 CFR 63.363, and the test methods listed in 40 CFR 63.365. The test report shall list the final exhaust mass emission rate of ethylene oxide.
4. Provide support for the assumption that at least 95% of the ethylene oxide used is exhausted through the vacuum pumps. Conduct testing and/or provide engineering analysis to support the assumption that at least 95% of the ethylene oxide used is exhausted through the vacuum pumps (aka chamber vents routed to the Ceilcote Scrubber and AAT Scrubber). These tests shall be conducted using the "worst case" batch cycle recipe. The worst case will result in the lowest percentage of EtO usage being routed to the vacuum pumps and generally means shorter wash times leaving more EtO in product and chamber air. The company shall provide a reasoned explanation for their choice as worst case.

5. Demonstrate that the Indoor Air System enclosure meets 100% capture. Conduct testing to demonstrate that the indoor air system enclosure meets 100% capture and provide operating parameters that reflect such conditions (e.g. – fan amps, pressure across enclosure, air flow direction at openings).
6. Determine the highest level of sensitivity of the Gas Chromatograph mass spectrometer used for the periodic bag sample monitoring, in terms of ppm ethylene oxide. Conduct testing and/or provide engineering analysis that determines the highest level of sensitivity of the Gas Chromatograph mass spectrometer used for the periodic bag sample monitoring, in terms of ppm of ethylene oxide. Explain if the unit can achieve a 0.01 ppm detection limit or lower and determine the accuracy at levels below 0.1 ppm. If the unit cannot achieve a detection level of 0.01 ppm, explain why not. For reference, stack exhaust concentrations of 0.01 ppm equate to roughly 10 pounds per year for each stack.
7. Determine the highest level of sensitivity achievable by the stack testing laboratory. Provide documentation of the sensitivity achievable by the laboratory selected to analyze the performance testing data.
8. Verify the stack height, airflow, and diameter of each stack. Provide documentation verifying the stack height, airflow, and diameter of each stack, and explain how each value was determined.

The Division expects that testing of the operations should be completed within 20 days after testing has begun. If Sterigenics believes a longer test period will be required, submit a detailed justification for a longer test period as part of the test plans submitted to the Division for review. The length of the test period may not extend beyond what is specifically approved by the Division. The test plan submitted for review must also include details regarding Sterigenics' possible sterilization of products during testing. Tests and monitoring shall be conducted only upon the Division's approval of the testing methods and procedures.

An Operating (SIP) Permit Amendment shall be obtained prior to operation of this facility for production purposes. If you have any questions or concerns, please contact me at (404) 363-7020 or via e-mail at [eric.cornwell@dnr.ga.gov](mailto:eric.cornwell@dnr.ga.gov).

Sincerely,



Eric Cornwell  
Manager  
Stationary Source Permitting Program



## Waldron, Sherry

---

**From:** Hays, Karen  
**Sent:** Monday, October 21, 2019 5:21 PM  
**To:** Hartman, Laura; Taylor, Sean; Wagner, Kevin  
**Cc:** Hoffman, Kathy; Klaben, Matthew; Mosby, Daryl; Waldron, Sherry; Kuoh, Dika; Damaske, Stephen  
**Subject:** RE: Sterigenics Work Practice Plan

Received. Thank you.

Karen

Karen Hays  
Chief, Air Protection Branch  
Georgia Environmental Protection Division  
4244 International Parkway, Suite 120  
Atlanta, GA 30354  
Office: 404-363-7016  
Mobile: 404-788-3955

---

**From:** Hartman, Laura <lhartman@sterigenics.com>  
**Sent:** Monday, October 21, 2019 5:17 PM  
**To:** Taylor, Sean <Sean.Taylor@dnr.ga.gov>; Wagner, Kevin <KWagner@sterigenics.com>  
**Cc:** Hoffman, Kathy <KHoffman@sterigenics.com>; Klaben, Matthew <MKlaben@soterahealth.com>; Mosby, Daryl <DMosby@sterigenics.com>; Waldron, Sherry <Sherry.Waldron@dnr.ga.gov>; Hays, Karen <Karen.Hays@dnr.ga.gov>; Kuoh, Dika <Dika.Kuoh@dnr.ga.gov>; Damaske, Stephen <stephen.damaske@dnr.ga.gov>  
**Subject:** RE: Sterigenics Work Practice Plan

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Sean,

Please find attached the updated work practice plan. I will send a hard copy via fed ex as well.

Please let me know if you have any questions.

Warm Regards,

Laura Hartman  
EHS Manager  
Sterigenics, A Sotera Health Company  
2015 Spring Road, Suite 650  
Oak Brook, IL 60523  
[LHartman@Sterigenics.com](mailto:LHartman@Sterigenics.com)



**From:** Taylor, Sean [<mailto:Sean.Taylor@dnr.ga.gov>]

**Sent:** Friday, October 04, 2019 10:24 AM

**To:** Wagner, Kevin

**Cc:** Hoffman, Kathy; Klaben, Matthew; Hartman, Laura; Mosby, Daryl; Waldron, Sherry; Hays, Karen; Kuoh, Dika; Damaske, Stephen

**Subject:** [EXTERNAL] RE: Sterigenics Work Practice Plan

**CAUTION:** This email originated from outside of the organization. **DO NOT CLICK** links or attachments unless you recognize the sender and know the content is safe.

The Division has reviewed the proposed Work Practice Plan and requests the following changes in order to ensure that negative pressure is maintained at the facility's operational areas:

- Provision for an initial verification of negative pressure while at least one rollup door is open, a trailer is backed up to the dock doors, and using dock door seals. Verification should include a measurement or smoke test along each outside wall of the facility, as well as the facility roof, where operational areas are located and there is a wall/roof penetration or opening.
- Addition of daily negative pressure verifications along all outside walls of the facility, either by airflow observations using a smoke test or similar visual method or using permanently installed differential pressure gauges.
- Provision for calibration, at least annually, of any pressure sensors.
- Addition of specifying the protocol for the sequence of using dock door seals and opening rollup doors during offloading/loading operations and associated training of affected employees.
- Protocols for additional verifications of negative pressure within the affected operational areas while any portion of those systems affecting air flow are inoperable.
- Addition of procedures to ensure all doors and openings to the facility are closed when the facility loses power.
- Provision for weekly visual inspection of the integrity of dock door seals.
- Provisions for recordkeeping/logs of the results of each inspection, observation, or measurement, and corrective actions taken for any adverse condition.

Within fifteen days of receipt of this e-mail, please modify the plan to address the comments above and submit the revised plan to the Division.

Please note that, in addition to the amendments above, the plan must be modified to be consistent with the amended air quality permit, when issued. Additional changes may be needed to the plan at that time and should also be submitted to the Division within fifteen days of such date.

Thank you for your cooperation. If you have any questions concerning this correspondence, please feel free to contact Sherry Waldron at 404-362-4569 or [Sherry.Waldron@dnr.ga.gov](mailto:Sherry.Waldron@dnr.ga.gov).

Sean Taylor  
Program Manager  
Stationary Source Compliance Program  
Air Protection Branch  
Office Phone: 404-363-7047



October 21, 2019

Mr. Sean Taylor, Program Manager  
Georgia EPD – Air Protection Branch  
Stationary Source Compliance Program  
4244 International Parkway, Suite 120  
Atlanta, Georgia 30354

Subject: **Sterigenics Atlanta facility Work Practice Plan – Requested Revisions**

Dear Mr. Taylor

In response to your request, Sterigenics is providing an updated work practice plan for the Sterigenics Atlanta facility located at 2971 Olympic Industrial Drive, Suite 116, in Atlanta, Georgia.

Sterigenics reviewed your requested changes to the work practice plan and is submitting an updated work practice plan to address those items that are applicable to the negative pressure system. Two proposed changes refer to the entire facility; however, the proposed negative pressure system includes areas within the facility where ethylene oxide could be present. Specifically, as stated in the permit application, the negative pressure system is proposed to capture air internally from chamber rooms, work aisles, processed product storage, and shipping areas. Therefore the following two comments are only relevant to the negative pressure area and not the facility.

*Letter states "Addition of daily negative pressure verifications along all outside walls of the facility, either by airflow observations using a smoke test or similar visual method or using permanently installed differential pressure gauges. "*

*Letter states "Addition of specifying the protocol for the sequence of using dock door seals and opening rollup doors during offloading/loading operations and associated training of affected employees."*

Please contact me at [lhartman@sterigenics.com](mailto:lhartman@sterigenics.com) or 630-928-1700 for questions or additional information.

Regards,

Laura Hartman  
Manager, Environmental Health and Safety

Attachment: Work Practice Plan

CC: General Manager, Sterigenics Atlanta Facility

## **I. PURPOSE**

This work instruction describes the practices taken to help limit fugitive emissions from the EO sterilization process

## **II. SCOPE**

Covers the routine sterilization processing as well as non-routine tasks which could generate leaks, releases, or fugitive emissions of EO.

## **III. PROCESS OWNER**

Atlanta EO facility management

## **IV. APPLICATION**

This procedure applies to operations and areas of the facility where EO is used or contains sources which could emit EO including Chamber room, work aisle, emission control areas, aeration room, and the processed storage/shipping warehouse.

## **V. IMPLEMENTATION REQUIREMENTS**

All requirements of this procedure will be implemented on the effective date

## **VI. PROCEDURE**

### **REQUIREMENTS**

- A. Employees will ensure work practices are followed to minimize generation of EO fugitive emissions.
- B. Emission control systems will be utilized to capture and control EO fugitive emissions to the extent practical.
- C. The Advanced Air Technologies (AAT) scrubber/dry bed system will be inspected and tested frequently to ensure required efficiency is maintained.
- D. Enhanced reporting of confirmed Lower Explosive Limit (LEL) or Gas Chromatograph (GC) alarms which show a released amount of EO to the environment to local agencies will be followed.
- E. Initial and refresher training is required.
- F. The facility will implement practices to ensure 100% of emissions in accordance with EPA procedures are captured and all dry bed systems reduce emissions to an acceptable level:
  1. Outlet reading of AAT dry beds will not exceed 1ppm
  2. Outlet reading of the Negative pressure system dry beds will not exceed 1ppm.

### **PROCEDURE**

- A. Minimizing EO Fugitives
  1. Upon receipt of EO drums from the supplier, employees will use existing work practices (as described in G-WI-EO-OPS-013, EO Drums: Safe Storage and Handling) to ensure drums are leak free

## DRAFT

and in good condition prior to being brought into the facility.

2. The monitoring devices in the EO drum storage area will be operational to monitor for leaks.
3. The setting for Chamber Door Interlock/VAPORS will be set to 5% or less.
4. At the end of the sterilization cycle, the chamber door will be opened slightly and the operator must allow the backvents to run for a minimum of 15-minutes prior to unloading the sterile product.
5. When unloading sterilization chambers of product, remove and immediately transport pallets directly to the aeration room, and do not stage pallets in the aisle before transporting to aeration.
6. Maximize, to the extent practicable, the duration that a product remains in aeration before removal, consistent with customer approvals and customer shipping demands for each particular product
7. The Shipping warehouse doors will remain closed unless in use for loading trailers.
8. Maintenance personnel will ensure safe practices for isolating EO lines and inspecting equipment are followed to prevent leaks/releases.
9. Enhance the current capture and control equipment:
  - i. The AAT drybed unit will be tested weekly using current sample bags and analysis with GC. The measured level cannot exceed 1ppm.
  - ii. The barometric dampers in the sterilization chamber room exhaust to the AAT. The dampers will be used to the extent possible to capture any fugitive emissions in the area.
  - iii. Maintenance to ensure any deviations to scrubber or dry bed operation are reported immediately to Corporate EH&S (scrubber tank level, pH, flow, EO concentration)

### B. Reporting of EO Leaks and Releases

1. In addition to current procedures for detecting and assessing leaks or releases, the facility will immediately notify corporate EH&S of any high level EO alarms so a joint investigation can be completed to determine quantity of the leak.
2. The affected part of the process will be stopped until the investigation is complete to ensure safety.
3. If the leaked amount of EO is determined to be > 10 lbs. or unknown within 15-minutes then an immediate notification to the National Response Center, Georgia EPD, the LEPC (Cobb County Fire Department) will be made.
4. When safe to do so, a complete investigation for each incident will be conducted to determine root cause with corrective actions
5. Follow-up reporting with each respective agency will be completed to report the final investigation report.

## DRAFT

### C. Training

1. Training is to be provided to all employees on this work instruction within 30 days.
2. Annual training is required.

### D. Operation and Maintenance of Negative Pressure System and Dry Beds

#### 1. Negative pressure system:

- i. Upon startup of the negative pressure system, demonstrate capture within the negative pressure area. The demonstration will determine the number of rollup doors that can be opened in the negative pressure area. See *Appendix 1* for diagram of the negative pressure enclosure.
- ii. On a daily basis, verify and record the pressure within the negative pressure area.
- iii. Calibrate pressure measuring device(s) for the negative pressure area annually.

#### 2. All facility dry beds:

- i. Dry bed media will be tracked to predict end of useful life in accordance with manufacturers recommendations based on EO usage.
- ii. In addition to the above, each dry bed system will be monitored weekly by taking an outlet sample with a Tedlar bag for 15-minutes. The sample will be analyzed with the GC and shall not exceed 1ppm
- iii. If a sample exceeds 1ppm a notification will be made to Corporate EH&S. A plan will be implemented to resample the system. If two consecutive samples are > 1ppm then the dry bed media will be changed out.
- iv. When dry bed media is changed out, each dry bed cell will be isolated from the system via damper valves. This will ensure the system can still operate with expected efficiency. The changeout of each bed will continue until all are complete.

#### 3. Facility doors

- i. Doors located in the negative pressure area will remain closed when not in use to ensure the negative pressure system is effective.
- ii. The facility will limit the number of dock doors that can be opened at a time within the negative pressure area based on the demonstration per D1. Dock seals will be installed to limit any openings around the docks while trailers are actively being loaded.
- iii. Prior to opening a dock door, operators will ensure the trailer is aligned correctly with the dock door seals.
- iv. Dock door seals will be visually inspected weekly to check the integrity and these inspections will be recorded.

4. Special emission control work practices in case of breakdown
  - i. If the sterilization chamber emission control system unexpectedly fails the chamber cycles will be suspended.
  - ii. If the negative dry bed system fan fails the secondary blower fan will be put online to ensure continued operation of the system.
  - iii. Verifications of negative pressure within the affected operational areas will be conducted while any portion of those systems affecting air flow are inoperable.
  - iv. If the facility loses power, then *EOP-001 Power Outages* will be followed and handheld monitors will be used throughout the facility to measure any EO levels.
  - v. All doors and openings in the negative pressure area will remain closed during power outages.

## VII. DEFINITIONS/ABBREVIATIONS

N/A

## VIII. REVISION HISTORY

Revision	Section	Description of Change
1	ALL	New work instruction

## 5



S. Waldron



OCT 21 2019

DATE

RECEIVED

OCT 22 2019

Air Protection  
Branch

October 21, 2019

Mr. Sean Taylor, Program Manager  
Georgia EPD – Air Protection Branch  
Stationary Source Compliance Program  
4244 International Parkway, Suite 120  
Atlanta, Georgia 30354

**Subject: Sterigenics Atlanta facility Work Practice Plan – Requested Revisions**

Dear Mr. Taylor

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*Letter states "Addition of specifying the protocol for the sequence of using dock door seals and opening rollup doors during offloading/loading operations and associated training of affected employees."*

Please contact me at [lhartman@sterigenics.com](mailto:lhartman@sterigenics.com) or 630-928-1700 for questions or additional information.

Regards,

Laura Hartman  
Manager, Environmental Health and Safety

Attachment: Work Practice Plan

CC: General Manager, Sterigenics Atlanta Facility

AIR#067-00093

## I. PURPOSE

This work instruction describes the practices taken to help limit fugitive emissions from the EO sterilization process

## II. SCOPE

Covers the routine sterilization processing as well as non-routine tasks which could generate leaks, releases, or fugitive emissions of EO.

## III. PROCESS OWNER

Atlanta EO facility management

## IV. APPLICATION

This procedure applies to operations and areas of the facility where EO is used or contains sources which could emit EO including Chamber room, work aisle, emission control areas, aeration room, and the processed storage/shipping warehouse.

## V. IMPLEMENTATION REQUIREMENTS

All requirements of this procedure will be implemented on the effective date

## VI. PROCEDURE

### REQUIREMENTS

- A. Employees will ensure work practices are followed to minimize generation of EO fugitive emissions.
- B. Emission control systems will be utilized to capture and control EO fugitive emissions to the extent practical.
- C. The Advanced Air Technologies (AAT) scrubber/dry bed system will be inspected and tested frequently to ensure required efficiency is maintained.
- D. Enhanced reporting of confirmed Lower Explosive Limit (LEL) or Gas Chromatograph (GC) alarms which show a released amount of EO to the environment to local agencies will be followed.
- E. Initial and refresher training is required.
- F. The facility will implement practices to ensure 100% of emissions in accordance with EPA procedures are captured and all dry bed systems reduce emissions to an acceptable level:
  1. Outlet reading of AAT dry beds will not exceed 1ppm
  2. Outlet reading of the Negative pressure system dry beds will not exceed 1ppm.

### PROCEDURE

#### A. Minimizing EO Fugitives

1. Upon receipt of EO drums from the supplier, employees will use existing work practices (as described in G-WI-EO-OPS-013, EO Drums: Safe Storage and Handling) to ensure drums are leak free

## C. Training

1. Training is to be provided to all employees on this work instruction within 30 days.
2. Annual training is required.

## D. Operation and Maintenance of Negative Pressure System and Dry Beds

## 1. Negative pressure system:

- i. Upon startup of the negative pressure system, demonstrate capture within the negative pressure area. The demonstration will determine the number of rollup doors that can be opened in the negative pressure area. See *Appendix 1* for diagram of the negative pressure enclosure.
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- iii. Calibrate pressure measuring device(s) for the negative pressure area annually.

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- ii. In addition to the above, each dry bed system will be monitored weekly by taking an outlet sample with a Tedlar bag for 15-minutes. The sample will be analyzed with the GC and shall not exceed 1ppm
- iii. If a sample exceeds 1ppm a notification will be made to Corporate EH&S. A plan will be implemented to resample the system. If two consecutive samples are > 1ppm then the dry bed media will be changed out.
- iv. When dry bed media is changed out, each dry bed cell will be isolated from the system via damper valves. This will ensure the system can still operate with expected efficiency. The changeout of each bed will continue until all are complete.

## 3. Facility doors

- i. Doors located in the negative pressure area will remain closed when not in use to ensure the negative pressure system is effective.
- ii. The facility will limit the number of dock doors that can be opened at a time within the negative pressure area based on the demonstration per D1. Dock seals will be installed to limit any openings around the docks while trailers are actively being loaded.
- iii. Prior to opening a dock door, operators will ensure the trailer is aligned correctly with the dock door seals.
- iv. Dock door seals will be visually inspected weekly to check the integrity and these inspections will be recorded.

The schematic diagram illustrates the layout of a BSL-3 laboratory. Key areas include:

- Aeration:** A large room on the left, labeled with a double negative pressure zone (--) and a negative pressure zone (-).
- Preconditioning:** Two rooms at the top, labeled 'PRECONDITIONING 2' and 'PRECONDITIONING 1', both with negative pressure zones (-).
- Shipping:** A room at the bottom left, labeled with a negative pressure zone (-).
- Chamber Rooms:** Multiple rooms on the right, labeled 'CHAMBER ROOM' with various numbers (e.g., 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880,



# GEORGIA

DEPARTMENT OF NATURAL RESOURCES

## ENVIRONMENTAL PROTECTION DIVISION

Richard E. Dunn, Director

**Air Protection Branch**  
4244 International Parkway  
Suite 120  
Atlanta, Georgia 30354  
404-363-7000

**OCT 31 2019**

Ms. Kathleen Hoffman  
Senior Vice President – Global Environmental, Health & Safety and Technical Services  
Sterigenics U.S. LLC  
2015 Spring Road, Suite 650  
Oak Brook, IL 60523

RE: **Consent Order No. EPD-AQC-6980**  
Sterigenics, U.S. LLC, Atlanta, Georgia

Dear Ms. Hoffman:

On October 22, 2019, the Division received the revised Work Practice Plan for the Sterigenics Atlanta facility required by Consent Order No. EPD-AQC-6980. The Work Practice Plan originally received on September 9, 2019 was updated to reflect the Division's requested changes. The revised Work Practice Plan meets the requirements of Condition No. 3 of the Consent Order.

Sterigenics must update the Work Practice Plan to be consistent with the amended air quality permit, when issued. Additional changes may be needed to the plan at that time and, if amended, should also be submitted to the Division for approval within fifteen days of such date.

Thank you for your cooperation. If you have any questions concerning this correspondence, please feel free to contact Sherry Waldron at 404-362-4569 or [Sherry.Waldron@dnr.ga.gov](mailto:Sherry.Waldron@dnr.ga.gov).

Sincerely,

Sean Taylor  
Program Manager  
Stationary Source Compliance Program

SMT:sgw

c: Daryl Mosby, Sterigenics

AIRS No. 067-00093

## **Waldron, Sherry**

---

**From:** Hays, Karen  
**Sent:** Thursday, October 31, 2019 8:35 AM  
**To:** Taylor, Sean; Damaske, Stephen; Waldron, Sherry  
**Subject:** sterigenics reporting  
**Attachments:** Atlanta EO Leak Incidents - August 2019.pdf; Atlanta EO Leak Incidents - September 2019.pdf

Sean just pointed out to me that I haven't been sending these on. I apologize!

Karen Hays  
Chief, Air Protection Branch  
Georgia Environmental Protection Division  
4244 International Parkway, Suite 120  
Atlanta, GA 30354  
Office: 404-363-7016  
Mobile: 404-788-3955

**EO Leak or Release Incidents - Sterigenics Atlanta Facility**  
September 2019

Incident Date	Incident Type(s)	Description	Release Amount (lbs)	Source Area	Investigation Conducted	Incident Status
No EO Leak or Release Incidents during September 2019						
Totals	0 Release Events		0			

**EO Leak or Release Incidents - Sterigenics Atlanta Facility**  
August 2019

Incident Date	Incident Type(s)	Description	Release Amount (lbs)	Source Area	Investigation Conducted	Incident Status
No EO Leak or Release Incidents during August 2019						
Totals	0 Release Events		0			



## Waldron, Sherry

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**From:** Hays, Karen  
**Sent:** Thursday, October 31, 2019 5:51 PM  
**To:** Taylor, Sean; McCain, Daniel; Brown, Heather; Waldron, Sherry; Damaske, Stephen  
**Cc:** Cornwell, Eric; Kuoh, Dika  
**Subject:** FW: Response to 09Oct Request  
**Attachments:** cvrltr31Oct.pdf; 14004-1\_Sterigenics\_EtO\_Final\_Protocol\_R1.pdf; 14004-2\_Sterigenics\_PTE\_Final\_Protocol\_R1.pdf

---

**From:** Wagner, Kevin <KWagner@sterigenics.com>  
**Sent:** Thursday, October 31, 2019 5:36 PM  
**To:** Cornwell, Eric <Eric.Cornwell@dnr.ga.gov>; Hays, Karen <Karen.Hays@dnr.ga.gov>  
**Cc:** Hoffman, Kathy <KHoffman@sterigenics.com>; Hartman, Laura <lhartman@sterigenics.com>; Mosby, Daryl <DMosby@sterigenics.com>  
**Subject:** Response to 09Oct Request

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Eric-

This email and attachments are submitted as responses to the 09Oct2019 memo to Sterigenics. In the attachments you will find our cover letter containing answers to the requests in the memo. In addition there are two test protocols attached for testing the new emission control system for the sterilization process as well as testing for the negative pressure enclosure.

Hard copies of these documents are being sent Federal Express to you attention as well. We look forward to working with Georgia EPD on the testing process.

Feel free to contact me with any further questions or correspondence.

Regards,  
Kevin

Kevin Wagner  
Director, Environmental Health & Safety  
Sterigenics, A Sotera Health Company  
[kwagner@sterigenics.com](mailto:kwagner@sterigenics.com)  
O: 630-928-1771  
C: 708-860-9101



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## Waldron, Sherry

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**From:** Hays, Karen  
**Sent:** Monday, November 4, 2019 2:46 PM  
**To:** Damaske, Stephen; Waldron, Sherry; Taylor, Sean  
**Cc:** Kuoh, Dika  
**Subject:** FW: Sterigenics Atlanta Facility - October Summary  
**Attachments:** Atlanta EO Leak Incidents - October 2019.pdf

---

**From:** Hoffman, Kathy <KHoffman@sterigenics.com>  
**Sent:** Monday, November 4, 2019 2:27 PM  
**To:** jlbennett@smynaga.gov; Hays, Karen <Karen.Hays@dnr.ga.gov>  
**Cc:** Wagner, Kevin <KWagner@sterigenics.com>; bob.ott@cobbcounty.org; Cooley, James <James.Cooley@dnr.ga.gov>  
**Subject:** Sterigenics Atlanta Facility - October Summary

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Attached is the monthly report on any EO leaks or releases from the Sterigenics Atlanta facility for October 2019.

Let me know if you have any questions on this report.

Regards,  
Kathy Hoffman

Kathleen Hoffman  
Senior Vice President - Global Environmental, Health & Safety and Technical Services  
Sterigenics, A Sotera Health Company  
2015 Spring Road, Suite 650  
Oak Brook, IL 60523  
Office: 630.928.1758  
[khoffman@sterigenics.com](mailto:khoffman@sterigenics.com)



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**EO Leak or Release Incidents - Sterigenics Atlanta Facility**  
October 2019

Incident Date	Incident Type(s)	Description	Release Amount (lbs)	Source Area	Investigation Conducted	Incident Status
No EO Leak or Release Incidents during October 2019						
Totals	0 Release Events		0			

## Waldron, Sherry

---

**From:** Hays, Karen  
**Sent:** Tuesday, December 3, 2019 4:56 PM  
**To:** Damaske, Stephen; Waldron, Sherry  
**Cc:** Taylor, Sean  
**Subject:** FW: Sterigenics Atlanta Facility - November Summary  
**Attachments:** Atlanta EO Leak Incidents - November 2019.pdf

---

**From:** Hoffman, Kathy <KHoffman@sterigenics.com>  
**Sent:** Tuesday, December 3, 2019 4:31 PM  
**To:** jlbennett@smynaga.gov; Hays, Karen <Karen.Hays@dnr.ga.gov>  
**Cc:** Wagner, Kevin <KWagner@sterigenics.com>; bob.ott@cobbcounty.org; Cooley, James <James.Cooley@dnr.ga.gov>  
**Subject:** Sterigenics Atlanta Facility - November Summary

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Attached is the monthly report on any EO leaks or releases from the Sterigenics Atlanta facility for November 2019.

Regards,  
Kathy

Kathleen Hoffman  
Senior Vice President - Global Environmental, Health & Safety and Technical Services  
Sterigenics, A Sotera Health Company  
2015 Spring Road, Suite 650  
Oak Brook, IL 60523  
Office: 630.928.1758  
[khoffman@sterigenics.com](mailto:khoffman@sterigenics.com)



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# EO Leak or Release Incidents - Sterigenics Atlanta Facility

November 2019

Incident Date	Incident Type(s)	Description	Release Amount (lbs)	Source Area	Investigation Conducted	Incident Status
No EO Leak or Release Incidents during November 2019						
	0 Release Events		0			
Totals						

## Waldron, Sherry

---

**From:** Taylor, Sean  
**Sent:** Tuesday, December 3, 2019 6:46 AM  
**To:** Hays, Karen; Kuoh, Dika; Damaske, Stephen; Waldron, Sherry; McCain, Daniel  
**Subject:** FW: Sterigenics Construction Schedule Amendment  
**Attachments:** Notification of Construction Amendment-Submitted 02Dec.pdf

**From:** Hartman, Laura <lhartman@sterigenics.com>  
**Sent:** Monday, December 2, 2019 5:48 PM  
**To:** Taylor, Sean <Sean.Taylor@dnr.ga.gov>  
**Cc:** Mosby, Daryl <DMosby@sterigenics.com>  
**Subject:** Sterigenics Construction Schedule Amendment

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Mr. Taylor

Please find attached notification of an amendment to the construction schedule. I will also fed ex a hard copy.

Please let me know if you have any questions.

Warm Regards,

Laura Hartman  
EHS Manager  
Sterigenics, A Sotera Health Company  
2015 Spring Road, Suite 650  
Oak Brook, IL 60523  
[LHartman@sterigenics.com](mailto:LHartman@sterigenics.com)



---

**From:** Hartman, Laura  
**Sent:** Monday, August 26, 2019 4:06 PM  
**To:** [Sean.Taylor@dnr.ga.gov](mailto:Sean.Taylor@dnr.ga.gov)  
**Subject:** Sterigenics Commencement of Construction

Dear Mr. Taylor

Please find attached a notification letter of commencing construction at our Sterigenics facility in Atlanta.

You should receive this notification in the mail tomorrow.

Warm Regards,

Laura Hartman  
EHS Manager  
Sterigenics, A Sotera Health Company

2015 Spring Road, Suite 650  
Oak Brook, IL 60523  
[LHartman@Sterigenics.com](mailto:LHartman@Sterigenics.com)  
O: 630-928-1724



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December 2, 2019

Mr. Sean Taylor, Program Manager  
Georgia EPD – Air Protection Branch  
Stationary Source Compliance Program  
4244 International Parkway, Suite 120  
Atlanta, Georgia 30354

Subject: **Notification: Construction Schedule Amendment**

Dear Mr. Taylor

In accordance with Order Number EPD-AQC-6980, Sterigenics is providing notification of an amendment to the construction schedule for the emission reduction project for the Sterigenics Atlanta facility located at 2971 Olympic Industrial Drive, Suite 116, in Atlanta, Georgia.

As previously submitted, the construction schedule identified miscellaneous construction to be completed by December 3, 2019 and commissioning to be completed by January 7, 2020. Sterigenics has been working with Cobb County on various construction related issues unrelated to the environmental performance or capabilities of the facility, which has slowed construction. Accordingly, we now expect miscellaneous construction to be completed by December 13, 2019. At this time, Sterigenics expects to meet the final construction date of January 7, 2020.

Please contact me at [lhartman@sterigenics.com](mailto:lhartman@sterigenics.com) or 630-928-1724, if you have any questions or need any additional information.

Warm Regards

Laura Hartman  
EHS Manager

CC: General Manager, Sterigenics Atlanta Facility





December 2, 2019

Mr. Sean Taylor, Program Manager  
Georgia EPD – Air Protection Branch  
Stationary Source Compliance Program  
4244 International Parkway, Suite 120  
Atlanta, Georgia 30354

Subject: **Notification: Construction Schedule Amendment**

Dear Mr. Taylor

In accordance with Order Number EPD-AQC-6980, Sterigenics is providing notification of an amendment to the construction schedule for the emission reduction project for the Sterigenics Atlanta facility located at 2971 Olympic Industrial Drive, Suite 116, in Atlanta, Georgia.

As previously submitted, the construction schedule identified miscellaneous construction to be completed by December 3, 2019 and commissioning to be completed by January 7, 2020. Sterigenics has been working with Cobb County on various construction related issues unrelated to the environmental performance or capabilities of the facility, which has slowed construction. Accordingly, we now expect miscellaneous construction to be completed by December 13, 2019. At this time, Sterigenics expects to meet the final construction date of January 7, 2020.

Please contact me at [lhartman@sterigenics.com](mailto:lhartman@sterigenics.com) or 630-928-1724, if you have any questions or need any additional information.

Warm Regards

Laura Hartman  
EHS Manager

RECEIVED

DEC 04 2019

AIR PROTECTION  
BRANCH

PM 12:219

CC: General Manager, Sterigenics Atlanta Facility

017 00093

## Waldron, Sherry

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**From:** Mosby, Daryl <DMosby@sterigenics.com>  
**Sent:** Monday, December 9, 2019 1:30 PM  
**To:** Waldron, Sherry  
**Subject:** 2019 Semi-Annual Report  
**Attachments:** SAtlanta\_AD19120913500.pdf

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Sherry,

As requested, attached is the 2019 semi-annual report for Jan -June 2019.

Regards,

Daryl-

This e-mail and any files transmitted with it may contain privileged and/or confidential information. If you believe this e-mail or any of its attachments were not intended for you, you must not use, distribute, forward, print or copy this e-mail or any attached files. If you have received this e-mail in error, please notify the sender by reply e-mail and then immediately delete the email and all attachments.



July 29, 2019

Georgia Department of Natural Resources  
Environmental Protection Division  
Stationary Source Compliance Program  
Air Protection Branch  
Atlanta Tradeport, Suite 120  
4244 International Parkway  
Atlanta, Georgia 30354-3908

Attention: Ms. Karen Hays, Unit Manager

Subject: Semiannual Synthetic Minor Deviation Report for Sterigenics, U.S., LLC, Atlanta, Georgia Facility Operating Permit No. 7389-0670093-S-05-0 for the period of January 01, 2019 to June 30, 2019

This letter provides information for the semi-annual Synthetic Minor Permit Deviation Report for Sterigenics, US LLC Atlanta, Georgia facility covering the period from January 1, 2019 through June 30, 2019. This report is intended to satisfy the monitoring and reporting requirements of Condition 5.4, 7.4 and 7.7 in operating permit number 7389-067-0093-S-05-0. For ease of reference, this report is organized by permit condition.

#### Semiannual Deviation Reporting Requirements

Condition 5.4 requires:

The Permittee shall maintain and operate the AAT Scrubber System (EC2) to ensure a maximum emission level of 1 ppmv or a reduction of 99% for aeration room vents (AR-1) and a reduction efficiency of 99% for sterilization chamber vents (SEV-1, SEV-2, SEV-3, SEV-4, SEV-5, SEV-6, SEV-7, SEV-8, SEV-10, SEV-11):

a. Aeration room vents: AR-1 – Once per month the Permittee shall simultaneously collect and record the concentration of a 15-minute ethylene oxide bag sample from both the inlet and outlet of the dry bed absorbers:	
i. If the facility is complying with the 1ppmvd standard, as specified in condition No. 2.4, and the concentration of ethylene oxide in the outlet sample of the dry bed absorbers increases to 0.9 ppmv or greater, the Permittee shall replace the dry bed material within 30 days, prior to the next scheduled aeration room exhaust sampling event.	Dry Bed outlet concentration did not exceed 0.9 ppm during this reporting period.
ii. If the facility is complying with the 99% reduction efficiency standard, as specified in Condition No. 2.4, and the AAT Scrubber System reduction efficiency decreases to 99.1% or less, the Permittee shall replace the dry bed material within 30 days prior to the next scheduled aeration exhaust sampling event. The AAT Scrubber System reduction efficiency shall be calculated by comparing the ethylene oxide loading into the AAT Scrubber System to the ethylene oxide mass exiting the dry bed absorbers.	N/A
b. Aeration room vents (AR-1) and sterilization chamber vents (SEV-1	N/A

Atlanta Semi-Annual Report  
For the Period January 1, 2019 to June 30, 2019

through SEV-9, and SEV-10 through SEV-11) – any instance when sterilization chamber exhausts and aeration room exhausts are simultaneously vented through the AAT Scrubber System, the Permittee shall comply with the 99% reduction efficiency standard. During any such event, the Permittee shall collect and record the concentration of a 15-minute ethylene oxide bag sample from the outlet of the dry bed adsorbers within 96 hours of changeover. The AAT Scrubber System reduction efficiency shall be calculated by comparing the ethylene oxide loading into the AAT Scrubber System to the ethylene oxide mass exiting the dry bed adsorbers. If the reduction efficiency of the AAT Scrubber System is less than 99.1%, the Permittee shall not route any sterilization replaced. Bag testing shall continue at a sampling frequency of once per week during the changeover of the sterilization chamber vents from the Ceilcote Scrubber (EC3) to the AAT Scrubber System.	
c. When the Permittee is sampling in accordance with Condition Number 5.3a or 5.3b, the ethylene oxide loading to the AAT Scrubber System, the ethylene oxide mass out of the AAT dry adsorbers and the AAT Scrubber System reduction efficiency shall be recorded for each sampling event. These records shall be kept in a form suitable for inspection or submission to the Division. Methods of calculation for these measurements shall be submitted in the site-specific monitoring plan.	N/A
d. The dates of dry bed material placement shall be recorded and kept in a form suitable for inspection or submission to the Division.	Records are maintained. Dry bed material replaced on Dec 3, 2018

### Reporting Requirements

Condition 7.4 For each monthly sampling event conducted in accordance with conditions 5.4.a.i and 5.4.b, the Permittee shall include the following information in the semi-annual report required by Condition 7.8.

a. For AAT Scrubber (EC2), any occurrence when analysis of the dry bed adsorber outlet sample concentration exceeded 1 ppmv.	None
b. For the AAT Scrubber System (EC2), any occurrence when the AAT Scrubber reduction efficiency indicates that the efficiency is less than 99%.	N/A
c. For the acid-water scrubbers (AAT Scrubber System EC2 and Ceilcote Scrubber EC3), any occurrence when the ethylene glycol concentration in the acid-water scrubber liquor is in excess of the maximum ethylene glycol concentration established during initial performance testing.	N/A
d. For the acid-water scrubbers (AAT Scrubber System EC2 and Ceilcote Scrubber EC3), any occurrence when the liquor recirculation tank level of the acid-water scrubber is in excess of the maximum liquor tank level established during initial performance testing.	None
e. For the acid-water scrubbers (AAT Scrubber System EC2 and Ceilcote Scrubber EC3), any occurrence when the scrubbing liquor pH rises above	None

Atlanta Semi-Annual Report  
For the Period January 1, 2019 to June 30, 2019

the manufacturers recommended level of 2.	
f. For the AAT Scrubber System (EC2) list any occurrence when analysis of the dry bed adsorber outlet sample indicates the concentration exceeds 0.9 ppmv, but is less than or equal to 1 ppmv.	None
g. For the AAT Scrubber System (EC2), list any occurrence when AAT Scrubber System reduction efficiency indicates the efficiency is less than 99.1%, but is greater than or equal to 99%.	N/A
h. For the AAT Scrubber System, (EC2), list any instance when the AAT Scrubber System breaches a dry bed adsorber material replacement threshold, but the dry bed material is not replace within 30 days.	N/A

**Condition 7.7 requires:**

The Permittee shall submit a written report containing any excess emissions, exceedances, and/or excursions as described in this permit and any monitor malfunctions for each semiannual period ending January 1 and June 30 of each year. All reports shall be postmarked by the 30<sup>th</sup> day following the end of each reporting period, July 30 and January 30, respectively. In the event that there have not been any excess emissions, exceedances, excursions or malfunctions during a reporting period, the report should so state. Otherwise, the contents of each report shall be as specified by the Division's Procedures for Testing and Monitoring sources of Air Pollutants and shall contain the following: [391-3-1-.02(b) 1 and 40 CFR 63.10 (e)]

- a. A Summary report of excess emissions, exceedances and excursions, and monitor downtime, deviations and monitor downtime in accordance with Section 1.5 (c) and (d) of the above referenced document, including any failure to follow required work practice procedures.

**There were no recordkeeping/ procedural deviations or excess emissions or excursions associated with section 7.7.**

- b. Total process operating time during each reporting period. Total processing time was:

**4,310 hours**

- c. The magnitude of all excess emissions, exceedances and excursions computed in accordance with the applicable definitions as determined by the Director, and any conversion factors used, and the date and time of the commencement and completion of each time period of such occurrence.

**There were no deviations during the period.**

- d. Specific identification of each period of such excess emissions, exceedances, and excursions that occur during startups, shutdowns, or malfunctions of the affected facility. Include the nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

**There were no deviations during the period.**

- e. The date and time identifying each period during which any required monitoring system or device was inoperative (including periods of malfunction) except for zero and span checks, and

Atlanta Semi-Annual Report  
For the Period January 1, 2019 to June 30, 2019

the nature of the repairs, adjustments, or replacement. When the monitoring system or device has not been inoperative, repaired, or adjusted, such information shall be stated in the report.

**There were no breakdowns of the monitoring system or devices during the reporting period.**

- f. Certification by a Responsible Official, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.

**Required Statement**

Sterigenics U.S. LLC has reviewed all applicable provisions of the Atlanta Synthetic Minor operating permit. There have not been deviations from applicable limitations or standards or monitor malfunctions during the reporting period from January 01, 2019 through June 30, 2019.

KATHOFFMAN  
Kathleen Hoffman  
Senior VP, EH&S and Tech Services

30-Jul-2019  
Date

If you have any questions regarding this submittal, please call me at (630) 928-1724.

Kind Regards,

Laura Hartman  
Laura Hartman  
Manager  
Environment, Health and Safety

cc: Air and EPCRA Enforcement Branch, U.S. EPA Region 4  
61 Forsyth Street  
Atlanta, Georgia 30303

Daryl Mosby - Atlanta General Manager  
Juan Segovia - VP of Operations

{847} 855-0999

GURNEE, IL 60031  
UNITED STATES US

CAD: 100999785/INET4160

BILL THIRD PARTY

TO USEPA REGION 4

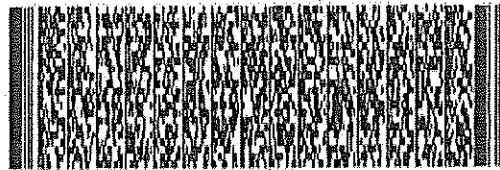
(847) 855-0999

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WED - 31 JUL 3:00P

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**XH QFEA**

30303

GA-US ATL



GURNEE, IL 60031  
UNITED STATES US

SHIP DATE: 30 JUL 19  
ACTWGT: 0.10 LB  
CAD: 100999785/INET4160

BILL THIRD PARTY

TO STATIONARY SOURCE COMPLIANCE  
GEORGIA EPD - AIR PROTECTION BRANCH  
ATTN: KAREN HAYES  
4244 INTERNATIONAL PARKWAY, STE 120  
ATLANTA GA 30354

(847) 855-0999

REF: DOCUMENTS

INV:

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WED - 31 JUL 10:30A  
PRIORITY OVERNIGHT

TRK# 7758 7476 7938  
0201

XH DBNA

30354

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